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# East Europe Report

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10 February 1986

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AGRICULTURE

GERMAN DEMOCRATIC REPUBLIC

#### AGRICULTURAL COOPERATIVE ASSOCIATIONS PROMOTE FARM POLICY

Moscow/East Berlin INTERNATIONALE ZEITSCHRIFT DER LANDWIRTSCHAFT in German  
No 6, 1985 pp 489-92

[Article by Drs Helmut Exner and Achim Rothnauer and graduate economist Edda Thiele, College for Agricultural Producers Cooperatives, Meissen, GDR: "The Inter-Enterprise Facilities in the GDR's Socialist Agriculture"]

[Text] The comprehensive implementation of the economic strategy for the 1980's, issue by the 10th SED Congress, calls for increasing economic achievements by way of greater labor efficiency and quality in agriculture. In this, cooperation turns out to be the suitable way for the further political, economic, and social development in each socialist enterprise in agriculture and the food-stuffs industry, particularly in each LPG, for intensifying its production and exhausting all potentials in the cooperative property.

As an essential feature of SED farm policy, cooperation always offers new opportunities for producing more, better and more cheaply in socialist agriculture, further intensifying production, fashioning the unified agricultural reproduction process according to plan and with a high benefit for the LPG's and their cooperation partners, and for society, and for actively promoting rural social development.

Where these targets and tasks can be resolved more efficiently through concerted efforts, the LPG's, horticultural producer cooperatives (GPG's) and the state farms (VEG's) are setting up cooperative facilities. Furthermore, enterprises in the foodstuffs industry and in commerce also are getting involved with the cooperative facilities in which production processes are centralized that are closely linked with the processing and marketing of farm products, such as processing, storage, and marketing installations for fruit, vegetables, and eating potatoes.

The cooperative facilities have been and are well tested organizational forms for the voluntary cooperation among LPG's, GPG's, and VEG's and other enterprises to  
--create a broad developmental leeway for modern agricultural productive forces and their effective use in specialized production units;

- promote comprehensive socialist intensification in the member enterprises through the activity of the cooperative facilities and industrially organize the centralized labor and production processes;
- facilitate an efficient implementation of the centralized labor and production processes for the member enterprises;
- steadily boost labor productivity through specialized producer collectives; and
- assist in the concentration and specialization of the member enterprises by bringing labor and production processes together in cooperative facilities.

The setting up of cooperative facilities was directly responsive to the idea of Marx that the developmental opportunities of the productive forces can be decisively broadened "by mere changes in the distribution of already existing capital, through simply changing quantitative groups." (Footnote 1) (K. Marx: "Das Kapital," Dietz publishing house, Berlin, 1974, Vol 1, p 655) The first cooperative facilities were thus set up by LPG's, GPG's, and VEG's and other enterprises at a faster rate in the mid-1960's because of the rapid development of the productive forces. Especially in the field of melioration and agricultural construction it turned out to be economically beneficial to centralize operational means of production and labor in joint facilities. Already in 1965 there were 213 melioration cooperatives and 332 inter-enterprise construction organizations. Setting up and developing cooperative facilities was however not only a requirement for efficiently developing the agricultural reproduction process, it also was an objective necessity of the social developmental processes and structural economic changes going on. In particular on the boundaries with other economic sectors there were objective prerequisites and requirements for setting up cooperative facilities to ensure well balanced proportions in the development of the productive forces and production relations. Not until one founded such facilities as agro-chemical centers (ACZ's) and drying plants could, from the economic vantage point, a higher efficiency be achieved through using important means of production made available by industry.

The constantly growing demands for supplying the population, proper as to deadlines and qualities, with fruit, vegetables, and eating potatoes and with animal products could be taken care of better through setting up and developing processing, storage, and marketing installations (ALV's) and cooperative facilities in livestock production.

#### Importance and Achievements of Cooperative Facilities

1. As a form of inter-enterprise cooperation that has stood up well in increasing production and improving its efficiency, LPG's, GPG's, and other enterprises are jointly organizing labor and production processes in 1,112 cooperative facilities (Table 1). Right now, the LPG's and other enterprises in 191 kreises, i.e. 87 percent of the kreises in the GDR, are taking advantage of the cooperation in one or several cooperative facilities (Table 2). Special importance goes to jointly managing industrialized plants in livestock production. As many as 32 percent of the industrialized plants in livestock production in existence bear the status of cooperative facilities.

Table 1: Number and Selected Production Conditions of Cooperative Facilities  
(1983)

<u>Types of cooperative facilities</u>	<u>Number</u>	<u>Manpower, VbE*</u>	<u>Basic assets, in M million</u>
Agro-chemical centers	264	24,557	2,391
Livestock production	238	16,928	3,404
Drying and pellet plants	126	4,752	964
Mixed fodder works	49	790	111
Processing and storage installations (ALV's) for fruit, vegetables and potatoes	46	4,172	641
Melioration cooperatives	159	14,708	731
Inter-enterprise construction organizations	218	42,067	1,354
Others	12	900	107
Totals	1,112	108,654	9,703

\*A full employment unit equals one worker or 2,100 working hours of part-time workers

Table 2: Grouping of Kreises in Terms of Cooperative Facilities

<u>Number of cooperative facilities in a kreis</u>	<u>Kreises:</u>	<u>absolute</u>	<u>relative</u>
0		2	1.0
1		5	2.6
2		9	4.7
3		16	8.2
4		21	10.8
5		30	15.5
6		33	17.0
7		22	11.3
8		27	13.9
9		14	7.2
10		9	4.7
Above 10		6	3.1

2. The cooperative facilities have 109,000 workers (VbE's), which amounts to 14 percent of the farm labor organizing and carrying on the production on orders from the member enterprises.

3. The material and financial funds concentrated in cooperative facilities by the member enterprises have constantly been reproduced with a surplus. That is reflected by the currently available M 9.7 billion in fixed assets (11 percent of GDR agricultural fixed assets).

The efficient use of these production conditions in the cooperative facilities increased the scope as well as the variety of performance in the participating LPG's and other enterprises. That crystallizes, among other things, in that in 1983:

- the cooperative facilities reached a gross output of M 7.5 billion (= a gross output of M 69,000 per VbE);
- the cooperative facilities produced a new product of M 2.6 billion (= M 24,000 per VbE);
- the ACZ's undertake for their member enterprises the basic fertilizing almost completely, the nitrogen application up to 83 percent, the crop protection up to 84 percent, and the liquid manure application up to 32 percent;
- the 126 cooperative drying and pellet plants produced 89 percent of the total of dry fodder and 54 percent of the straw pellets;
- in the 238 cooperative livestock production installations, 6.6 percent of the agricultural livestock was kept, including 5.4 percent of the cattle, 7.7 percent of the pig, and 9.5 percent of the laying hens stocks. The share they meet for state orders in milk is 5.9 percent, fat-stock 7.9 percent, and eggs 8.8 percent;
- and the 218 inter-enterprise construction organizations and the 159 melioration cooperatives with a construction output of M 2.5 billion are making a decisive contribution to the rationalization, reconstruction and value preservation of agricultural structures and installations, are involved in improving soil fertility through irrigation and drainage, and help improve the rural working and living conditions.

#### The Cooperative Facilities' Further Steps in Social Development

Based on the positive results achieved thus far in using the cooperative facilities to boost farm production and its efficiency, further chances must be used to integrate cooperative facilities more effectively still within the uniform agricultural reproduction process organized by way of a division of labor. The work mainly has to be focused still more consistently at high yields and performance in crop and livestock production and thus, at a fine end product and high efficiency in the member enterprises. To implement this general objective, differentiated solutions are needed for the various cooperative facilities in terms of their specific responsibilities for effectively organizing the streamlined agricultural reproduction process. Experience has told us that for practical solutions good results are obtainable mainly in two ways, for one thing, by perfecting the labor and production organization in the cooperative facilities in line with the territorial requirements of the cooperating LPG's and VEG's.

For cooperative facilities like the ACZ's, inter-enterprise construction organizations and melioration cooperatives, which serve multi-cooperative LPG and VEG performances and the member enterprises of which are made up of LPG's and VEG's of several cooperatives, this way is very important. For an ACZ this means, for example, a permanent assignment of a regular production department, brigade or ACZ task force to the territory of a crop production LPG, the stationing of such collectives, with their equipment, in the main bases of the LPG territory, and the expansion of performance for livestock production.

Inter-enterprise construction organizations are beginning to form their construction performance sectors and brigades in such a way that they can, by and large, take on within the territory of an LPG or VEG cooperative the investment construction, the maintenance and repair for the building substance and rationalization measures. For all other cooperative facilities, however, territorial aspects of the labor and production organization are playing a greater role as well.

While perfecting the labor and production organization in cooperative facilities it might make economic sense to shift some labor processes back to the member enterprises. That would apply a finer tuning to the cooperative facilities and is mainly aimed at a further social and economic consolidation of LPG's and VEG's.

The second way is a direct integration of cooperative facilities within LPG and VEG cooperatives. An essential starting condition for that is that most of the cooperative facilities' economic relations take place with the crop and livestock production LPG's and VEG's. In a given territory they jointly organize the streamlined reproduction process for crop and livestock production while they also are the member enterprises of the cooperative facilities. Those prerequisites given, the further social development of a number of cooperative facilities in livestock production into LPG's or livestock production VEG's, and of cooperative drying and mixed fodder plants into enterprise departments of existing LPG's, is a way for further consolidating the socialist production relations.

Both ways help implement the objective formulated at the 12th Farmers Congress of the GDR that the "LPG's with their cooperative facilities which command considerable production capacities work together still more rationally." (Footnote 2) ("12th GDR Farmers Congress Resolution, Proceedings," Staatsverlag der DDR, Berlin, 1962, p 56)

#### Making the Cooperative Character of Cooperative Facilities More Prominent

The growing demands placed on performance in the implementation of the new phase of the economic strategy in agriculture call for making an ever better use of the potentials of cooperative property. For cooperative facilities relying mainly on cooperative property in their entirety, the further shaping of the cooperative character is imperative for it. That makes it necessary that "the cooperative farmers themselves decide on the cooperative facilities which the cooperative farmers have created." (Footnote 3) (E. Honecker: "SED Central Committee Report to the 10th SED Congress," Dietz publishing house, Berlin, 1981, p 76) The production capacities are to be used for it by being comprehensively applied to the implementation of the plan tasks in the member enterprises. Especially under the altered reproduction conditions of the 1980's, the member enterprises bear a higher responsibility for an efficient full capacity utilization of the production capacities and the labor capacity of cooperative facilities. For the inter-enterprise construction organizations that means, e.g., that they will apply their capacities primarily to the rationalization, reconstruction, maintenance, and repair of LPG and VEG structures and to improving rural working and living conditions.

The rules on membership and on joining cooperative facilities also have to be updated in line with the requirements of the reproduction process. There one obeys the principle that LPG, VEG, and GPG membership depends directly on the requirements for a more efficient organization of the division of labor in the reproduction process.

As of now, that will have to be more consistently ensured yet, e.g., in ACZ's and drying plants, in which thus far only some LPG livestock production units here and there have been members, and in cooperative livestock production facilities, where a broader participation by crop production LPG's is sought. Experience also tells us it is not enough for bringing off the abundant rationalization and value preservation measures that only a few LPG's and VEG's are members of inter-enterprise construction organizations. It therefore proves appropriate for all LPG's and VEG's to become members.

Cooperative and socialist state property has to be identified precisely and be reproduced with surplus. Cooperative facilities reproduce both forms of property. The further reproduction of the funds in the cooperative facilities must therefore also be reflected by the size of participation by member enterprises. That forms the basis for an increasingly better assumption of the rights and duties of member enterprises. Furthermore, the labor capacity has to be used more comprehensively still to cope with peak labor periods and ensure continuity in the labor processes in the member enterprises.

The fund of working hours available in the cooperative facilities is an important reserve for covering technologically needed working hour requirements in the LPG's and VEG's. Its use therefore is more and more being written into the plans of the cooperative facilities and the member enterprises. It turns out to be of advantage here when cooperative farmers constitute a high proportion of the total work force. For especially the delegated cooperative farmers help tie cooperative facilities more to the biological processes in crop and livestock production. The principle that the member enterprises bear the responsibility for creating the proper cadre prerequisites for forming and consolidating their cooperative facilities thus implies the recruiting of cooperative farmers. A precondition for it is that cooperative farmers working in cooperative facilities can exercise the same rights and duties there as in the LPG's.

The management and planning of the cooperative facilities should follow cooperative principles. That is why in the management and planning of these facilities one assumes in principle that the democratically elected board decides on the plan and other developmental issues. That means the board chairman is the head of a member enterprise, and the chiefs of cooperative facilities are elected by the board for 3 years. It turns out to be an important condition for fully developing the cooperative character that the planning of the labor and production processes in the cooperative facilities are strongly influenced in substance by the member enterprises and that the member enterprises decide the performance range on their own. That is why the plans of the cooperative facilities are subject to board decisions.

All member enterprises have to perceive the advantages of close cooperation between the LPG and its cooperative facilities. It has been found of benefit that profits produced in the cooperative facilities are used mainly for the economic consolidation and social development of the member enterprises.

The further implementation of the two goals in the SED farm policy, to boost output and its efficiency systematically so as to supply the population with foodstuffs and industry with raw materials at a rising level while also improving the working and living conditions, requires also consolidating the

cooperative facilities as links in agriculture important in terms of the division of labor and reinforcing the relations between the member enterprises and their cooperative facilities. An important yardstick for measuring each step that deepens cooperation, it turns out, are increasing yields in crops and more livestock products while efficiency improves. (Footnote 4) (E. Honecker: "From the Discussion Speech at the 7th SED Central Committee Session," Dietz publishing house, Berlin, 1973, p 38)

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AGRICULTURE

HUNGARY

MINISTER OF AGRICULTURE ON NEW PLAN, GOALS

Budapest PARTELET in Hungarian No 12 Dec 85 pp 21-27

[Article by Central Committee Member and Minister of Agriculture Jenő Vancsa:  
"New Aspects and New Requirements in Our Food Economy"]

[Text] More than 70 percent of our country's surface is suitable for agriculture. This is twice the European average of cropland. One fifth of the wage-earners are even now farmers and other millions are supplementing their income by tilling their small household plots, or doing other kind of agricultural work. Agriculture and food industry are playing a great role in our country's social and economic life, even in this period of building developed socialism. Our party's agricultural policy is based on this awareness and as a result of it our socialist agriculture has been able to catch up with the rhythm of development that the leading countries of the agricultural world are dictating, and it progresses dynamically.

I

In our farming the same production system and production dynamics, which have been developed during earlier 5-year periods, prevailed also during the years of the Sixth 5-Year Plan, although the economic conditions of production became more rigorous, as a result of our falling in line with the changes that occurred in both international economics and in the productivity of our domestic economy. We had to put our economy on a new path of development in a situation in which the restoration of its external financial balance came into sharp focus. A consequence of this was slower growth for the sake of improvement in our financial balance. Yet our economic policy expected from the various branches of agriculture--precisely for this reason--a steady and dynamic pace of growth, including improvements in productivity and economy, during this Sixth 5-Year Period as well.

According to the provisional statistics Hungarian agriculture fulfilled the provisions of the Sixth 5-Year Plan, thus meeting the expectations.

The plan included a yearly 3-percent increase in the production value of basic agricultural activities. Despite the heavy damages, caused by two years--in some areas three years--of drought, the plan has almost been completed. The entire agricultural branch of our economy increased the gross value of production--calculated on constant prices--by around 3.7

percent, instead of the planned 3.1 percent. In the two most important areas of agricultural production, i.e. in cereal growing and meat production, the provisions have been fulfilled or even exceeded. Insofar as the cereals are concerned, we harvested during the last five years--in spite of the drought years--more than 700 million tons, i.e. 10 million tons more than during the previous Fifth 5-Year Period, which, incidentally was considered as clearly successful from the point of view of cereal growing. During this period the production of animals for slaughter came close to 11.4 million tons, thus pointedly exceeding the provisions of the Sixth 5-Year Plan. The increase in the output of our food industry surpassed that of the agricultural production, yet it fell behind the provisions of the plan.

In view of the achievements of our agriculture and food industry, we may--by and large--point out that the more than 200,000 workers of our food economy have carried out the tasks that the Sixth 5-Year Plan set for them. Under difficult circumstances the agricultural branches of our economy have been stabilizing factors of our socio-economic life and contributed to the growth of our foreign trade, domestic food supply and national income.

Insofar as the agricultural export is concerned, the accomplishment of our agricultural branches surpassed by almost 5 percent the provisions set forth by the Sixth 5-Year Plan. Meanwhile, according to the provisional data, the direct import of our branches stayed below 4 percent, in sharp contrast with the planned 10 percent. Thus the assets of our export-import balance greatly exceed the expectations.

In our domestic food supply the per capita consumption of meat increased to around 77 kilograms. Our households also consumed more dairy products and eggs during the Sixth 5-Year Period. Nutrition became more modern and healthy, although in this area there are still a lot of things to be done.

At the outset of the Sixth 5-Year Plan period state subsidies still surpassed the sum paid as taxes and other contributions by 6 to 7 billion forints per year. In 1984 our food economy closed already with an active budgetary balance and this year the surplus paid by its enterprises amounts to approximately 8 billion forints. The value of this accomplishment is further enhanced by the fact that between 1980 and 1984 the price level of industrial materials and tools used by agriculture increased by 27 percent, whereas the state purchase price of agricultural products rose only by 17 percent.

These figures show that, when preparing the Sixth 5-Year Plan, our party and government correctly assessed the situation of our agriculture and food industry, their possibilities and potentials. High standards have been set for the individual economic units. Of course one economic unit was more successful than the other in meeting the requirements. Thus the financial situation of the individual enterprises is very variable. Those big farms which are struggling with harsh natural conditions were particularly beset with problems.

We are summing up the agricultural achievements of the last 5 years with pleasant feelings. We trust that we shall be able, in the years to come, to make the most of the lessons learned from our accomplishments and successes. At the same time--just in consideration of the future--those tensions, to put it plainly those setbacks and negative phenomena, which appeared already in 1984 in our branches, and became even more conspicuous this year, deserve at least as much, if not more, attention.

In recent years financial problems have been observable in a significant percentage of the producing cooperatives and state farms. In certain areas a decline in the interest for small farming is perceptible. The animal stock is decreasing. And in spite of the fact that during the Sixth 5-Year Plan Period our agriculture produced more than it ever did, and created more values, this year--mainly as a consequence of the tensions which developed and because of the frost damages in the vineyards--our agricultural production fell back.

Our party and government paid great attention to the analysis and disclosure of the causes of this development. The difficulties may be basically traced back to those market influences, marketing problems and impact of costs, which have become gradually stronger over the last 5 or 6 years. Prices have declined in international agricultural trade from year to year, and our price losses have thus become significant. Our domestic production was thereby affected, since one third of our agricultural products are sold on export markets. The economic regulators transmitted, however moderately, the impact of the world market, including its effect upon the cost of materials, tools and equipment needed for agricultural production. Our food economy was unable to balance out these growing losses by improvements in the managerial productivity. To be exact: less and less units of our food economy were able to bear the increasing charges and to maintain the dynamics of production development.

In certain areas, i.e. in cattle and hog breeding, corn, fruit, grape and vegetable growing, the farms' profits declined particularly quickly. The financial status of our major socialist agricultural enterprises was also affected by the fact that the impetus of certain auxiliary industrial activities, which had earlier grown so vigorously and had been lucrative, in 1984 relented and their profitability decreased.

The investment resources available to the various branches of our agriculture and food industry proved to be inadequate even for the indispensable technological development projects. This is particularly striking in case of the large-scale animal husbandry. Our food processing industry was unable to undertake the planned investment because of lack of resources. On account of certain investment problems and since resources were scarce, the introduction of new energy and material saving methods became slower than otherwise it would have been possible. In this respect various countries with advanced agriculture are ahead of us. The earlier balance between agricultural production and food processing industry deteriorated and became another source of losses.

During the last couple of years a certain kind of managerial policy became also a source of tensions. Notably part of the producing farms reacted to the increasing severity of the regulations by suppressing those production sectors which were losing money or were of low lucrativity. This seems of course the simplest way to eliminate deficits. But it would be much more conducive to success if the producing cooperatives and state farms would rather change their production profile, achieving thereby profits. Their efforts should be concentrated on improving the productivity of the sector in question within the framework of the enterprise. Many examples are there to prove the viability of this approach.

Our economic analyses show that the sources of tensions are in part of conceptual and to a greater extent economic origin. In order to eliminate them we should further strengthen the idea and its related practice which focus on improvements in the cost effectiveness, productivity and international competitiveness of the production process. We cannot count on the possibility that those international marketing conditions, which in recent years characterized the trade and price fluctuation of agricultural products and the commerce of such industrial materials, tools and machines which are used in agriculture, will radically change before long. We can only then stand fast in competition if we are producing more rationally and economically.

Of course a further advance in the technology of production and the broadening of the resources of development are indispensable. The government devised next year's economic regulations by taking these into consideration. They contain essential changes in comparison with the regulators of earlier years. Thus far, in the 1980s, the regulators had a curtailing effect. More exactly, their overall impact slashed the financial balance of the big agricultural enterprises by several billions of forints. This year's regulators are the first to bring a change since, in contrast with last year, their ultimate impact is that they subsidize rather than curtail the finances of the enterprises.

The 1986 price and financial regulators will in the first place improve the lucrativity of animal husbandry. By increasing the state purchase price of hog, by subsidizing the price of milk and by introducing seasonal poultry prices, the government certainly improves the profitability of these branches of production. Corn growing will be stimulated by a tax allowance. similar conditions will be given also in a few other sectors in order to stop stagnation and declining production by a further exploitation of the resources.

The tensions inherent in the agricultural and food industry production cannot be wound up at once and in all areas. Thus we have to define the sequence of importance of the various branches.

## II

The provisions of the Seventh 5-Year Plan make it clear that the role of the food economy remains invariably important in our national economy. True, the pace of growth in the gross production value set forth for the Seventh 5-Year Period lags behind what we have achieved during the years of the Sixth 5-Year Plan. The fact however is that the basis is now set higher; 1-percent value represents in the Seventh 5-Year Period larger quantities than it ever did during the Sixth 5-Year Plan period.

Yet there is an area of business management which seems to be less spectacular than quantitative growth, i.e. improvements in the quality of finished product. The intensive course is a much more difficult and complex phase of economic progress than quantitative development, it requires much more intellectual and technological training. Now, these two requirements have acquired in our food economy--in addition to the concept of quantitative growth--more emphasis than anything else before and, as a result of the demands of the market, they have become more than anything else so far the focus of management. We may also say this: to the extent that we are able to improve the quality and lower the cost of our food products, their marketability and the stability of our exports will improve to the same extent. This is of vital interest for both the workers of our food economy and for the economic development of our country.

According to the plan, exports should grow by 20 percent by 1990, i.e. quicker than the pace of growth of production. At the same time our direct agricultural imports ought to decrease. By attaining these two goals the assets of our agricultural and food industry export-import balance would increase by 30 percent, in comparison with today. We should add to this that neither the domestic supply demand, nor the outlooks for exports are making an equal production growth in all areas of the agricultural and food industry production possible. The plan takes this into consideration.

During the 5 years ahead of us plant growing and particularly cereals will acquire major emphasis in Hungarian agriculture--which is anyway mainly based on cereal and meat production--for both marketing and investment reasons. Our new 5-year plan counts on a cereal production of 17.5-18 million tons by 1990, which would surpass the current record by 2.4 million tons. For achieving this we will have to increase this year's approximately 2.8 million hectare cereal cropland and to strengthen the material-technological basis of production. For we have to accomplish the 18-million-ton cereal production primarily by an increase in yields, by means of intensive farming. In wheat our goal is 5,500 kg per hectare. Our record harvest of this plant was in 1984, 5,410 kg of grains per hectare were then gathered in our silos.

In corn the 7,200 kg nationwide average yield per hectare, planned for 1990, exceeds by 340 kg the current record harvest in 1982. The achievement of the planned yield will be made more difficult by the fact that meanwhile the present cropland of corn will have to be increased by 125,000 hectares. One of the keys to the 18 million tons of cereal production is precisely the extension of the cropland of corn.

Corn is our cereal of the highest potential yield. It has a decisive role in foraging, meat and egg production. The exploitation of its production potentials enshrines great possibilities. We have to use this possibility, following the example of those large farms which have already various times harvested more than 10,000 kg corn per hectare. This is also imperative in case of wheat and other cereals, oleaginous plants, other field and garden crops, meadows and pastures, the productivity of which should be better exploited.

The biological, technical, chemical and agronomical conditions could be created in order that plant growing should develop at a faster pace than animal husbandry. The output of the latter should also be adjusted to the conditions of foreign markets. This means, among other things, that our milk production should primarily be determined by the growing domestic demand. We are planning a more moderate increase in the production of animals for slaughter than what our records over the last 5 years show. Insofar as the production of animals for slaughter is concerned, according to our current information, the prospects of poultry marketing are particularly promising. Thus a greater portion of the planned increase in this sector will be made by broiler-chicken.

Thus the plan tries to coordinate the structure of production with the market possibilities and demands. In the same way we will have to determine with economic means--nationwide and in each individual enterprise--also the system of production. In order to accelerate the progress of our socialist large-scale agriculture on its intensive course, we have to further modernize the means and production technologies and have to make our technological advance faster.

The material-technological sources of our food economy will not change during the Seventh 5-Year Plan. We continue to rely on our domestic machine and chemical industry and on the deliveries of the CEMA countries. In addition we will purchase--on a more modest scale--part of the machines, materials and tools from the developed capitalist countries. It is particularly important for us that the domestic background industry of our food economy should modernize its products faster than before. In agriculture the industrial products which promote greater productivity, higher yields and better quality have increasing importance. The possibilities provided by nature for agricultural production and which are being improved by hybridization supported by the fast developing biological sciences, can only be increasingly exploited with the help of tools and materials, manufactured by industry. The quality of these industrial resources and the competence of the man who uses them determine in our era the success of agricultural production.

The manufacturing, production cost and use of the industrial tools and materials require our particular attention. A significant portion of the products of our domestic agricultural background industry lags unfortunately well behind its advanced counterparts in the world, despite the fact that it has made great progress during the last two decades. Its machines--particularly in view of the agricultural prices--are very expensive. It is

not easy to change this situation, but it must be done. An agriculture of worldwide importance can only be created with industrial products which are on world level. This is valid also for the technological characteristics and prices of the machines, tools and equipment.

The resources of development have been very tight in recent years in our national economy, thus also in our agriculture and food processing industry. At present the trend in our national income and our external debt commitments will not make us possible to increase the investment resources of our food economy either.

### III

The chances of increasing the investment resources for our agricultural branches reside indeed in the more productive utilization of the existing resources, materials and energies, both on national economic scale and in the food economy. Only human work and activities can convert our wishes into value-producing energies. It was so until now and so it will be in the future. Under our present circumstances those production sectors will gain prominence which promote profitable exports. Government measures have already stimulated the production of those goods which contribute to increases in exports. This process will be strengthened in the future by means of credits, state support and other measures.

We have to enhance the sense of initiative and flexibility in our agriculture and food processing industry in order to enable the enterprises to use the export stimuli offered by the government. Invariably we are going to try to take the initiative to participate in World Bank programs. In this way we may be able to attract such external resources to our food economy, which can provide the producers with really modern and efficient tools and equipment.

By a better utilization of our existing means and energies we will have to create, in the beginning of the seventh five year plan period, the conditions for animation. The further development of our macroeconomic guidance system plays a great role in this. In course of this we will make planning more exact and at the same time entrepreneurial activities more successful. Managerial decisionmaking will ever more be shifted to positions where most information is available for correct assessment and where the means for a control of the implementation process are best at hand. On the basis of this principle the weight, responsibility and role of central guidance will grow, while also the autonomy, responsibility and interest of the enterprises will be stronger in all phases of business management.

A foresighted management, which can more exactly assess and better follow the economic processes and can quicker react to them, and such internal entrepreneurial activities which are based on human creativity, responsibility and sense of cooperation are our principle strengths on which we rely. The party organizations can help the unfolding of these energies by their specific means.

It is a very important task of our era to modernize the mechanism of the enterprises' internal life, its adjustment to the economic performance dictated by the requirements. The changes brought about in the state enterprises by the creation of the enterprise councils can only then promote production if we put the greater intellectual strength and the increased sense of human responsibility in the service of the impending requirements.

Cooperative democracy and entrepreneurial democratism have been, also thus far, important elements of our party's agricultural policy. The unfolding of this energy, which releases the creative forces, makes production more conscious and strengthens the self-discipline of those who participate in production, will be needed also in the seventh five year plan period. In order to promote this, the internal working order of the enterprise will have to be so organized that, aside from the idealistic and conscientious relationship, the financial interest will also become better asserted. The interest of each production unit, each sector of the enterprise and all workers should become stronger in all branches of our economy. A prime task of our macroeconomic guidance system is to strive for this. The party agencies, all mass organizations and social forces could also do a lot to achieve this.

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ECONOMY

INTERNATIONAL AFFAIRS

CEMA LABOR DIVISION, CONSEQUENCES FOR GDR EXAMINED

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[Article by Prof Dr Karl Morgenstern, head of teaching collective in the Department of Socialist Business Management at the Technical University in Dresden: "Improvement in the Production and Export Structure in the GDR and Socialist International Labor Division as Conditioned by Intensification"]

[Text] The further organization of the developed socialist society is linked to the steady perfection of the national economy's structure. That applies most particularly to the implementation of the economic strategy in the process of comprehensive intensification. Consequently, issues of structure development, specially the structures of output and foreign trade, have a central role in SED resolutions and its economic policy.

Continuing on from the earlier plenums (in particular the Fourth and Seventh SED CC Plenums) and the Tenth SED Congress, the Ninth SED Plenum fixed decisive directions for the structural further development of the GDR's national economy. The necessity was emphasized to take a qualitatively new step toward further processing in production, more resolutely develop and introduce state-of-the-art equipment and, to this end, continue to speed up the development, production and use of microelectronics. It is imperative to take into account the changed conditions for machine construction and electrical engineering/electronics, which profoundly affect the production structure and call for the appropriate organization of the product assortment and better product quality.(1)

The necessary reinforcement of the national economy's export strength especially requires a substantial perfection of the output and export structure and, from many aspects therefore, of the import structure also.(2) Just as in other CEMA countries, the GDR output and export structure (above all the product structure) is currently undergoing a significant and persistent change. It must be expected that its speed and extent will continue to grow. Comprehensive intensification, the scientific-technological revolution and enormous changes in world demand make for new dimensions and greater dynamism of national structural changes in the CEMA countries, too. That, in turn, is linked with the more profound and effective organization of the socialist international division of labor. Scientific-technical advances, intensification, the further development of the socialist international

division of labor and continuing structural change represent an indivisible unity.

#### On the Factors Affecting Structure Development

Many and varied factors affect the development of a country's output and foreign trade structure. In connection with the economic laws of socialism, which determine the general objectives and requirements of economic development, the basic trends of the organization of structures arise from these factors. The accurate appreciation of these dimensions therefore represents an indispensable basis for sound decisions on structural development, the clear outline of output and exports and, consequently, the international specialization and cooperation of combines and the national economy as a whole.

Changes have always occurred in the operation of and conditions for the operation of the factors affecting economic developments. In many respects, though, and from various aspects, they are now of a fundamental, stronger and far more qualitative nature. That applies in particular to the worldwide speed-up in scientific-technological advances, the change in demand, the transition to comprehensive intensification and changes in world trade. One result are new topics and tasks for structural development and the organization of the socialist international division of labor. The ascertainment and appreciation of these changes and the generalizations to be deduced therefrom are of the utmost importance.

Starting from the requirements of comprehensive intensification, the following are the outstanding factors or groups of factors determining or affecting structural development:

- Scientific-technological advances (development trends and needs of the productive forces, mainly basis innovations and key technologies, in conjunction with production conditions as the form of motion of the productive forces);
- Demand, the market and sales situation (domestic demand as well as the national need for exports and imports, the demand of the most important trade partners and on international markets, external realization conditions);
- The international division of labor (requirements and potentials of socialist international labor division and participation in worldwide labor division);
- The particular domestic situation (favorable economic and natural production prerequisites, resource situation, limits of the potential);
- The foreign trade situation of the national economy and world trade trends (world market prices, terms of trade, foreign trade balances, credit, interest and payment terms, competition on international markets, changes in the structure of world trade, and so on);

-- The international political situation, the balance of forces between socialism and capitalism, the strength of the three revolutionary streams.

Decisions affecting structure must take into account all factors and rely on knowledge of their reciprocal interaction. Further research will have to gain exact knowledge about the trends and intensity of the operation of the various factors, ascertain the branch specific conditions for each object of study and, on this basis, arrive at progressive theoretical generalizations and feasible conclusions.(3) One of the questions arising in this connection is this: Are certain general statements and weightings with regard to the intensity of the effect of individual factors on the development of structures possible or necessary, despite the close connection and reciprocally interlinked effect of many and varied structural factors? We must answer in the affirmative.

To be accentuated as the main factors in the broad spectrum of structural factors are scientific-technological advances, demand (including the requirements arising from the political situation), the socialist international division of labor and the specific conditions of the national economy. These factors determine the general picture especially in their reciprocal interaction. The international division of labor and national conditions represent or may represent both the prerequisites and limitation of the evolution and development of productions. At the same time, other factors should certainly not be underestimated. Price trends, credit, interest and payment terms on the world markets, for example, significantly affect national economies and the international division of labor, the flow of exports and imports, foreign trade balances (and, consequently, the domestic equilibrium and proportionality) as well as the structures of the various economies. And yet there are some differences. These effects reflect deeper causes, they are the results of still other factors and--possibly even more important--they may be coped with and neutralized to the extent that the national economy is capable of handling scientific-technological advances and using the benefits of the international division of labor.

Science and technology clearly hold pride of place as long-term structure determining factors.(4) One of the changes mentioned in the effect of the factors mainly concerns the greater and dominating role of science and technology for social production and its structure. The scientific-technological revolution of our age compels the structures to change and defines the principal directions of this change. New needs and need structures arise alongside. At the Ninth SED CC Plenum, Erich Honecker emphasized that "to most resolutely develop the potentials of the scientific-technological revolution for the progress of the productive forces--that is on our agenda. Our success or failure to meet this compelling necessity will decide the GDR's future as a modern industrial country with a developed agriculture and good standing on international markets."(5)

The technological revolution in and renewal of the production apparatus and the evolution of modern industries occurring in the advanced industrial countries do not simply affect the development of structures, they actually determine the rate of progress, Kudrow describes the development of the

"science intensive industries...(as) 'engines' for general economic structural changes and the spread of new technologies."(6) Most of all do the products and equipment of these industries decide the development of the use value structure and largely also the development of values, export capacity and the earnings to be achieved on the world market. Significant progressive changes have taken place in the industrial structure of the GDR. They are reflected in, among others, the increasing further processing in the metallurgical, chemical metal processing industries as well as in the healthy growth of microelectronics. Consequent upon the strong increase in the output of electronic components since 1970, their exports have risen substantially, from 1.8 million valuta marks in 1970 to 281.9 million valuta marks in 1983.(7) The following table shows the priority growth enjoyed by important GDR industries.

Development of the Industrial Gross Output of Selected GDR Industries (1970 = 100)

	1971	1975	1980	1983
Total industry	106	136	173	194
Machine tool construction	109	156	239	305
Electronics industry	120	188	308	458
Data processing and office machine industry	113	170	278	332
Precision engineering and optical industry	104	135	231	359

Source: "Statistisches Jahrbuch der DDR, 1984" [1984 GDR Statistical Yearbook], Staatsverlag der DDR, Berlin 1984, p 140.

The demands of the national economy (including export and import needs), the demands of the USSR and other socialist countries and, in general, the trends on international markets represent the decisive primary elements for the definition of the GDR's national economy. Significant changes have happened and are still occurring with regard to this group of factors, too. They arise in particular from the standard of development achieved and the transition to the intensive type of reproduction in other CEMA countries also, from scientific-technological advances and changes in the structure of world trade.

It is of the utmost importance for us to constantly and farsightedly observe the change in the demand and supply structures in the other countries, above all the USSR as the GDR's main trade partner, and to analyze its objective course. We need to fully respond primarily to the qualitative changes in the structure of demand (among others, the priority demand for highly productive equipment for raw materials, fuel and energy production and conversion, for machines and equipment for the reconstruction and modernization of machine construction, the light and food industries, for equipment and devices for flexible automation, complete rationalization solutions, high-quality industrial consumer goods), the higher standard of demand and the rising rate of changes in demand. The national economy, the combines and foreign trade enterprises must handle these changes very flexibly. The greater demands

involve the technical product standards and quality, delivery lists, customer service, replacement part supplies and prices. Products and services must demonstrate a high standard of international competitiveness on the CEMA market also and with respect to all these parameters. In general, it is imperative to orient the development of technologies and products to market requirements, to proceed with innovation processes while taking into account external sales conditions and their trends.(8)

The international division of labor--especially within the framework of socialist economic integration--is increasingly important for the development of the socialist economies. The necessity of advancing to a higher stage of cooperation and integration among the CEMA countries, stressed at the 1984 CEMA countries' economic summit meeting, is objectively and decisively, and in conjunction with political conditions, based on the developmental requirements of the modern productive forces and the transition to comprehensive intensification. At the same time we must consider that, with regard to fundamental aspects, an intensive type of reproduction demonstrates different relations between economic growth, the national development of structures and the socialist international division of labor than a mainly extensive type of reproduction.(9)

Scientific-technical advances determine the main elements in the evolving new relations. Scientific-technical progress in the most important fields can be handled only by an effective international division of labor and cooperation. Involved here are mainly the structural effects achievable by the international division of labor and cooperation (coupled with concentration, time and substitution effects) from two aspects: The development (faster or otherwise not possible at all) of new modern industries and concentration (specialization) on the relatively most promising productions. I will deal in greater detail with two groups of topics arising in this connection, and which need to be more profoundly examined.

The first is concerned with the necessary concrete analysis of international socialization processes, mainly due to scientific-technological advances. In view of the necessity, urgency, spheres and key issues of the international division of labor, we need to draw more precise distinctions regarding various industries/sectors. Specialization and concentration requirements tend to appear in a new guise, novel relations emerge between diversification and concentration.

In some fields, scientific-technical progress, the use of modern equipment may lessen the urgency of the international division of labor. However, even in such cases we usually see later that the overall need for the international division of labor, cooperation and exchange does grow after all: In research and development and in all fields interacting with the respective production and providing important preconditions for its handling, such as the development of modern product engineering, the exchange of special equipment, high-quality components and materials. Especially characteristic here is flexible production engineering. CAD/CAM systems, flexible automation, comprehensive standardization and the use of modular systems as well as modern methods of production organization facilitate the rational development and manufacture of a larger product assortment (even in smaller series), the rapid

conversion of production, the efficient manufacture of special designs. This allows domestic production to a certain (greater) extent to respond to various international market trends, the rapidly changing demand, the increase in special customer wishes and the greater demand for product systems. If, however, we also take into consideration the fact that the demand for many products remains strong, that the law of the large series continues to apply (and, increasingly, with respect to standardized subassemblies, too), we must initially and from the standpoint of output conclude that differences in concentration and specialization requirements, the optimum volume of output as well as rational dimensions and structures of operation are increasing in the various industries. It is important, though by no means enough, to note this with regard to the international division of labor. The use of modern equipment may well lessen or even entirely cancel the need for international specialization in the manufacture of specific products, but it merely shifts the urgency of this need to another direction. Aside from the actual manufacture of the products, this follows mainly from the growing intensity of research and the high cost of the procurement of new equipment.

Of outstanding relevance in terms of theory and practice is consideration of the fact that international socialization proceeds with particular intensity in modern industries, the fields crucial for scientific-technological advances and long-term growth. We may go so far as to speak of a new dimension of internationalization. Prime examples of this new dimension are the long-term collaboration, division of labor and cooperation now tackled jointly by the GDR, the USSR and other CEMA countries in the fields of microelectronics, nuclear energy, computer technology and data processing, modern communications, robot equipment and biotechnology. The tremendous cost of research and development, investments, production, sales and marketing work, the necessity of their realization, the enormous knowledge and ability needed to handle these complex productions in terms of technology and organization, and also the economical volume of output frequently in excess of the domestic market (whether for single products, subassemblies and parts or a broader range of products)(10) presume and expand the international division of labor and the world market. The steadily more important cooperation in science and technology, engineering, investments, reconstruction and modernization measures arise from these developments of modern productive forces, and so does the rapidly growing international exchange of scientific-technical results, technical knowledge, managerial and organizational experiences and other intangible performances.

We need first of all some qualitative analyses to enable us to fully appreciate and correctly evaluate these new development requirements and trends of the international division of labor. Indices of foreign trade trends alone are less and less adequate for providing quantitative evidence. Though the development of foreign trade intensity remains important (taking into account the rising proportion of data and services of all kinds), indices concerning cooperation in other spheres of reproduction are gaining increasing import. Only by their means will it be possible to comprehensively reflect the progressive international socialization and interlinking of the reproduction processes in socialist economic integration.

The other group of issues involves the close connection between the growing function of the socialist international division of labor for intensive

economic growth and the possibility and necessity in the process of its further development to fully take into consideration and efficiently utilize the specific conditions prevailing in the CEMA countries. Along with scientific-technological advances and the greater economic development of the various national economies, differing changes are occurring in the effect of specific national conditions on structural developments. We note some weakening effects or such as develop in a different direction, for example in the case of production traditions which often continue to affect and develop in new productions.(11) In general a significant influence is exerted by the differences between the countries with regard to their size and the absorptive capacity of their domestic markets, their scientific-technical and economic potentials, domestic resources, experiences, and so on. Two elements need to be emphasized, because they are steadily gaining in importance: The limiting effects of potentials and resources on the development of structures on the one hand, and the prerequisites to be efficiently utilized for the development of particular productions on the other.

The situation with regard to resources available in the combines and the national economy is assuming increasing importance. That is an inevitable consequence of the enormous cost of basic innovations, the development of scientific-technologically leading industries and productions including the component industry, the production capacity and standard of which are more and more important for modern industry. It is all the more imperative at the time of the definition of output and exports to take into account the dimension and structure of research and development potentials, materials, energy and manpower resources, fixed assets and accumulation capability. At the same time, the deepening of the socialist international division of labor and the efficient involvement of our national economy in the worldwide division of labor facilitates as well as requires the use and further development with the greatest possible economic efficacy of the appropriate research and production prerequisites (skilled manpower, much experience, educational standards). The concomitant greater utilization of exchange benefits (in absolute and relative terms) is indispensable for the rising efficiency of the national reproduction process.

In this context, one of the basic issues arising with regard to the development of the CEMA countries' output and foreign trade structures is the relation between the convergence and differentiation of structures. The appropriate organization of this relation has a fundamental impact on the optimalization of the structures and their reciprocal adaptability and capacity for complementing each other. Changes are occurring in this respect in the new reproduction conditions. Existing knowledge requires review, reappraisal and addition. This applies to, among others, the concretization of generally valid structural features emerging along with the objectively necessary and steadily higher development of the economic structures in the socialist countries. In conjunction with this, it also applies to the question how general features evolve in the particular, the extent and direction of the persistence or even stronger definition of differences in structures (specially output and foreign trade structures). We may express this in the following hypothesis: On the basis of national macrostructures--similar and yet differing in details--and other generally valid development

requirements (such as the trend to increasingly higher stages of processing and more complex productions), differences get to be more marked mainly within the industries and with regard to the product and performance structures of output and exports. That is both the consequence of and the prerequisite for intensive international labor division, in particular internal industry specialization and cooperation.(12) This opinion is based first of all on the fact that the multiplicity of variants of possible national structure definitions increases as the result of scientific-technical advances and the ongoing expansion of the world range of capital and consumer goods, which need to be developed mainly by deepening the socialist international division of labor; in the second place on the necessity more resolutely to base the further organization of structures in the socialist countries on efficiency criteria (on the basis of demand), to make an internationally high scientific-technical and economic standard in selected fields the merciless yardstick. In order to accomplish this, we must (in addition to other bases) ensure a structure building on the latest achievements of science and technology or capable of using them while, at the same time, being optimally adjusted to national resources and other specific conditions of the respective country.

#### Requirements and Criteria of an Efficient Structure of Output and Exports

The action and utilization of structural factors proceed within the framework of the concrete internal and external economic and political situation of the country and the socialist community. The requirements on national development, the organization and steady perfection of the output and export structure derive from the respective factors and situation. The following explanations will concentrate on requirements arising from intensification and the goal of reinforcing the export strength of the national economy.

For the GDR and the other CEMA countries, the incessant reinforcement of export strength to all world regions is a fundamental requirement of smooth growth, scientific-technical progress and the increasingly better satisfaction of human needs. Reinforcing export strength means the constant growth of exports, based mainly on the rising export yield of the national economy. It is imperative to maintain and expand market shares, develop promising export markets, achieve long-term high and adequate foreign exchange earnings and, by this means, safeguard the stability of the imports needed by the national economy.

The general and supreme need arising therefrom is the rapid development and introduction of modern productive forces. In foreign trade intensive countries, such as the GDR, in particular, the success achievable thereby largely depends on sound foreign trade conceptions as elements of conceptions for the development of structures and product programs of the national economy as a whole and the combines in particular. In the interest of the best possible economic utilization of the results to be achieved, research policy must already be directed to the aim of strengthening the export potential and sustained by a well defined export policy.

The following are important requirements which would have to be supported in a detailed presentation:



- Demand appropriate production consonant with the domestic national demand including import needs, international market requirements and specific customer wishes--with USSR requirements being central; the development and production of exportable and foreign exchange profitable products, product systems and services together with the increase in the share of software. Taking the potential into account, the range of exports in selected fields must display the necessary breadth and comprehensiveness;
- The priority development of science and technology intensive industries and productions which are standard bearers of scientific-technological progress and show dynamic growth without, however, neglecting important traditional product and export lines. One of the basic needs is the guarantee of planned proportional development including the component industry in the GDR and within the framework of international specialization and cooperation;
- The most advanced possible further processing of domestic and imported raw materials and materials, the comprehensive and efficient expansion of the domestic raw materials and other materials base;
- The guarantee of a scientific-technical standard that is high in international terms, and of a high degree of novelty with respect to the products and services--both accompanied by quick market efficacy and world standard customer service. The products must be competitive and made available at a time favorable for introduction on the market as well as in quantities appropriate to demand. A key issue is the expanded offer of new technologies and problem solutions as well as the respective equipment, primarily for reconstruction and modernization;
- The guarantee of low cost production by, among others, the increased development of international site benefits (the rational utilization and further development of favorable research and production conditions coupled with observance of transport factors) and the achievement of economical output series.

The implementation of these demands calls for the national economy's flexibility and its ability to very quickly respond to scientific-technological advances and changes in demand on international markets. Based on these requirements, we may summarize as follows the criteria for the organization and appraisal of the export profile: Market appropriateness (marketability) of the products and services, the extent of further processing and novelty, use value parameters and product quality, efficiency of research, development and production simultaneous with maximum gains of time, export profitability, export volume and growth, market shares.

However important the exact formulation of the requirements and criteria of structural development, the main topic of further examinations must evidently be the concrete analysis of its realization and the generalization of desirable approaches and circumstances. Our practical response to the requirements presents great challenges to research, development, production and marketing as well as to international cooperation--in fact the entire reproduction process, and it does not proceed without contradictions. That

applies to the extent of the complexity and novelty of the products, materials intensity and the extent of further processing, the ratio of export volume to export profitability, the period of guaranteed and effective sales.

The development and production of new products is linked with great challenges and new tasks. New markets usually need to be developed. At the same time, the market not only requires new and steadily more complex techniques but also--with regional differences--products obtained by traditional methods and less complex equipment. Still, these products also need to be constantly further developed and their user friendly qualities guaranteed. Further processed products do not automatically yield higher export earnings. Relatively materials intensive products may find assured sales at a particular point in time and demonstrate satisfactory export profitability (of course we still need to develop every possible opportunity for materials conservation). Frequently it is necessary to a certain extent to export fairly unprofitable products in order to arrive at the export volume necessary in the respective period of time. Though we should primarily strive for assured long-term sales, we must certainly grasp any evident albeit short-term sales opportunities and fill temporary gaps in the market.

It is therefore imperative in every case to respond to the marketing situation, the economic development and the research and production conditions. Ultimately decisive is the need to make available market appropriate products and services with a favorable cost/profit ratio in a volume and at a time enabling us to obtain the necessary export volume at rising export efficiency. At the same time, this requirement must be satisfied at a high and steadily advancing scientific-technological and economic standard.

The main direction of the structure improvement, its crucial qualitative feature, is represented by the speeded-up development of new, highly processed and science intensive products, services and industries, the use of resource conserving technologies, the development and efficient utilization of key technologies. That will determine the ongoing definition of the production and export profile of GDR industry in conjunction with the implementation of comprehensive intensification and the permanent reinforcement of our export strength. It is the only way for the GDR's national economy at the same time to keep up with the constant advance in the development of structures in the other CEMA countries--including the priority rate of growth of the metal processing industry. Only by these means will the GDR be able to remain an interesting trade partner, at all times offer an attractive export assortment and earn the necessary export surplus by high-quality products of the machine construction industry and the electrical engineering/electronics industry.

The national economy will boast the necessary adaptability to changing reproduction conditions, the change in structures and needs of the partner countries as well as of world markets and actively influence this change if its production and foreign trade structure is based on the latest achievements of science and technology, has a high international standing with regard to the development of science intensive fields which determine technical progress, demonstrates advanced innovation rates and is distinguished by adequate export flexibility. We may therefore draw conclusions and conditions for the realization of the demands on efficient production and export profiles which call for a differentiated approach consonant with the specific situation of industries and combines. The following are some of the most important conclusions:

1. The correct definition of key points with regard to the development and production of new equipment and products (selection of nationally significant and high yielding innovation processes) and the quantitatively and qualitatively adequate concentration of efforts and resources on these fields and industries presume well founded decisions, the accurate knowledge and observance of scientific-technological trends, market and demand trends, the necessary expenditure and the available material, financial and intellectual potentials and forces. Decisions about structures are often also decisions about international specialization. In each case they affect and alter the export and import relations of the national economy. It is therefore extremely important to at least in good time recognize and take into account the development intentions and trends in the respective fields in the other CEMA countries, more and more coordinate structural developments and, at the same time, take into account and actively utilize the requirements and opportunities of the international division of labor.

2. The development of new types of products and technologies must result in a noticeable growth in national efficiency. That is the objective of the speed and direction of renewal. "Rising economic results are the criteria for the renewal of production."(13) New products decisively affect the export profile if they help achieve a significant growth of export earnings. This assumes that the additional labor needed for more highly processed products and modern equipment is embodied in a genuine improvement of use values and internationally recognized as skilled work by means of high foreign exchange

earnings.(14) "We are talking about new products that embody a genuine improvement in use values and enable us to realize a high newly created value accompanied by declining production costs."(15)

3. In addition to quality, sound marketing is crucial for new products so as to safeguard sales and the best possible foreign exchange earnings. As a rule marketing is more complicated and costly with regard to such products, and the competition fiercer. This must be taken into consideration by way of thorough consumer research, quick development and transfer to production, the choice of a favorable time for market introduction as well as by internationally competitive customer services. In this manner we can achieve and maintain a large slice of the market. And only then will the efforts invested in research and production really pay off. The more original the products and services, the more able they are to satisfy or arouse urgent demand, the greater the gain of time and the lower the costs, the greater will be the price advantage, the longer lasting the sales.

4. The concentration of forces and resources on entirely new fields and types of products should be properly proportionate to the continued manufacture and constant further development of good traditional commodities, world marketable, foreign exchange profitable and steady product and export lines.(16) That holds true especially if these latter represent a significant export volume. The maintenance of high standard, profitable and salable goods and the gradual abandonment of obsolete products must represent a sound synthesis. Necessary for reasonable decisions in this respect are, among others, forecasts and analyses regarding the growth of earnings to be expected from new items and export lines and on the volume and efficiency of the export of existing commodities (assuming their steady improvement and adjustment to changes in demand). Well prepared production conversions are increasingly important in this context. They must be carried out quickly and may in some cases be accompanied by the immediate and total abandonment of the old items, while the old type of production may continue in other instances. The domestic demand for the respective products and the security and efficiency of imports in the case of a shift in production (assumption by another country) are both to be considered in this connection.

5. To do justice to the need for manufacturing efficiency as well as to the increasing differentiation in demand and the tendency to smaller series, the greatest importance must be assigned the more profound standardization, the building block system and the introduction of flexible production engineering. They make it possible on the basis of standardized basic designs to rationally develop and produce product variants and special designs in accordance with specific uses and customer wishes.

6. In the case of new technologies, machines and equipment urgently needed for national intensification and likely to achieve a significant rationalization push, we need to find an economically warrantable ratio between their use in the domestic economy and the time and volume of their exports.

7. World marketable and user friendly software solutions and other intangible services are of the utmost importance for the expansion of our

export potential. In some fields they are a basic precondition for selling hardware at all or for profit and to maintain and expand market shares. At the same time we must note that the development of competitive software and other services is tied to the availability of modern equipment and that, as a rule, a close connection exists between "material" and "intangible" trade--if such terms are admissible at all. Intangible services are largely door openers for, companions or successors of exports and imports of modern machines and equipment, complete plant and other items. Altogether, with all due respect for the significance of the exports of intangible services, we must not look them alone. Precisely in the interest of reinforcing our export strength, we need--within sound limits and in specific fields--more imports, too, of scientific-technical results, technological experiences and licenses likely to speed up the development and use of productive technologies and the manufacture of high-quality products.

8. The speedier development of the national component industry and the international division of labor requires great efforts. Good quality components, available in sufficient volume--just like high-quality materials--have become a cardinal point at issue for the appropriate supply of modern machines, devices, consumer goods and complete plants. At the same time, our export potential can be increased by exporting these products as such.

#### Some Tasks Relating to the Deepening of International Specialization and Cooperation in Research, Development and Production

The international division of labor is a crucial foundation and important means for innovation and the modernization of the national economic structures. The transition to comprehensive intensification in the European CEMA countries presents qualitatively greater challenges to international specialization and cooperation. At the same time, its development meets with new and complex but in many respects more favorable conditions.(17)

Basically we may assume that, to the extent that efficiency and quality in the widest sense move to the fore in international specialization and cooperation, and how we succeed in keeping up with the development trends and needs of the new productive forces and the constant change in demand, the division of labor and cooperation turn into fundamental preconditions for intensively expanded reproduction and the steady perfection of structures, the evolution of highly efficient production and foreign trade structures in the CEMA countries. It is decisive for modern science and technology to everywhere become the basis of the division of labor, that new products and processes in particular are the object of international specialization and cooperation, that research and production cooperation resolutely concentrates on the directions decisive for scientific-technical progress and intensive growth (such as basis innovations and high technology) with the aim of their rapid and wide ranging economic efficacy. Included in all this are specialization and cooperation in the development and production of special equipment, high-quality subassemblies/components, materials and substances. Examples are offered by our cooperation with the USSR and other countries in the field of microelectronics and modern communications equipment.

Within the framework of research cooperation, the development of materials and energy conserving technologies and other modern productive processes (so-called cross section technologies) gains increasing importance, because such processes are urgently needed by several or all countries in the interest of intensification.

One of the main orientations of GDR specialization and cooperation is the development and production of product systems, machine series and device families in the types and performance classes required, technological lines and complete plants. That is due to the requirements of international markets. We are thus able to quickly and rationally respond to the increasingly more precise specific user conditions and special customer wishes. The same applies to the necessarily expanded offer of comprehensive solutions for reconstruction and modernization as well as rationalization aids and equipment. This is an ever more significant field for the division of labor and international exchange. Responding to the new development processes of the productive forces (merely indicated here) means to include the need to more than hitherto in the organization of international specialization and cooperation to take heed of the unity of hardware and software, material and intangible services, and to link international specialization and cooperation with all the services needed for setting up the operation and subsequent modernization of machines and equipment supplied. The final important task of the division and labor and cooperation consists in the speeded-up development and substantially expanded exchange of parts and components, high-quality and universally usable subassemblies and sets. Modern controls, microelectronic modular units, BMSR [industrial measuring, control and regulating technology] and other components largely decide the efficiency and reliability of products and plant. The measures of international specialization and cooperation must contribute to proportional development.

On the one hand, the ongoing division of labor and cooperation, therefore, will be characterized by increasing complexity. That applies to the interrelations between industries, reproduction phases and stages to be observed and efficiently organized as per plan, as well as to relations between the various types of cooperation. That affects the linked processes of scientific-techno advances, the development of key technologies, the relations between scientific-technical cooperation, investment cooperation, reconstruction/rationalization, production specialization and cooperation and foreign trade. On the other hand it will feature the speedier development of "the division of labor in detail." The transition to a qualitatively higher stage of cooperation among the CEMA countries requires management, planning and economic stimulation to be so developed as to more comprehensively make available the benefits of the socialist division of labor in the new circumstances. Handling the interrelation of stability, dynamism and flexibility of the division of labor calls for intensive forecasting efforts and conceptual work, long-range coordination, programs and contracts as well as for the fastest possible response to new scientific-technological developments and changes in demand, greater flexibility and operational skills in the organization and management of the specialized processes. Reserves as well as the proportionality and equilibrium of the reproduction processes are the prerequisites for the constant and profound change in structures which, in turn, creates ever new proportionality and efficiency conditions. Common and

farsighted planning and the constant mutual offer of new products, technologies and services must constitute a sound synthesis. The skilled central management and planning of all basic issues and main orientations as well as of decisive objects of cooperation must be even more effectively linked with the greater initiative, responsibility and economic stimulation of the economic units. Considerable reserves of international specialization and cooperation may be developed by the expansion of direct relations between the combines, associations, enterprises and research institutions of the CEMA countries.

In order to achieve all of this, it will be necessary to more actively organize the commodity-money relations within the framework of the planning cooperation which needs to be steadily perfected, and to more effectively use value categories to stimulate new techniques, efficient structures and variants of the division of labor and cooperation, for the best possible and world market competitive customer services. Arising therefrom are the corresponding requirements on price formation as well as on the perfection of foreign exchange and financial relations between the CEMA countries. Included as a singular but important requirement are more flexible methods of balancing and settling the exchange of specialized and cooperated products and services. This problem is nothing else than the need to further develop management and planning, the economic mechanism of cooperation and socialist production conditions as a whole consonant with the developmental needs of the new productive forces and intensively expanded reproduction.

#### On the Methodological Bases for Decisions on Structural Changes

Sound decisions on the development of structures in the context of the international division of labor require exact qualitative and quantitative bases. The necessary directions and the most beneficial variants must be ascertained and evaluated with the help of analyses, efficiency calculations and comparisons of the world market competitiveness of the products and services. The following are most in need of analysis:

- Scientific-technological trends and technology developments,
- Demand trends and short and long-term sales opportunities,
- The development of world market prices and other parameters of the world market,
- The development of structures in the CEMA countries and in world trade.

To be further included in the analyses are

- Comparisons between the costs and the qualitative demands with respect to the various items and the potentials and experiences available in the combine/national economy regarding research and development, production and marketing,
- The ascertainment of the requirements of and possibilities for the international division of labor (optimum dimensions for research,

development and production, efficient specialization goals and methods of cooperation as well as for rational regional site distribution).

Recent studies have confirmed that investigations and evaluations of efficiency tend not yet to be assigned the importance they ought to enjoy. That neglect is incompatible especially with the demands arising from the transition to comprehensive intensification and the higher stage of the socialist international division of labor. Efficiency calculations must extend to production (including research and development) and to foreign trade. We also need more cost and profit comparisons for export products with optimum international values, and proof of efficiency must be provided for international specialization and cooperation. I will note only one other among the topics to be further studied: The more profound examination of relations between efficiency development (and their reflection in the relevant indices) in the stages of production through sales, and the examination of the connections between efficiency indices and the criteria of the world market competitiveness of products. In addition to gaining further knowledge about the evidence (and the limits of the evidence) offered by various indices, it must be our objective to investigate whether and what feasible systems of indices may be established. We are here concerned particularly with conclusions for practical work, the setting of efficiency premises for research and development, production, exports and imports.

Consequently we are not only interested in raising output efficiency, for example, but certainly also in the effect on export efficiency; not only in the improvement of export profitability but certainly also in the question whether valuta earnings have grown in absolute terms (in other words the relation to the import intensity of the products); not only the extent of novelty and further processing per se but also the question whether this has resulted in larger foreign exchange earnings. We may not consider only the advance of efficiency measured by national indices; the relation to top world quality must also be one of the predominant decisionmaking criterion. This involves the question, among others, whether higher kg prices are achieved by new products, and what is the relation of the domestic valuta price to the average world market prices of competing products.

In the case of international standard comparisons, we need to emphasize complexity and consistency.(18)

Sound conclusions on changes in assortment and export profile, on variants of the international division of labor as well as well-grounded objectives relative to improvements in quality and efficiency for existing items also presume that we compare prices as well as scientific-technical parameters, and that--wherever available--at least some cost elements are taken into account (such as materials and energy use, manufacturing and development times).

The difficulty of compiling the last listed comparisons is often pointed out. However, practical examples prove that at least approximations can be ascertained if all available data are properly used. In conjunction with analyses of the applied technology and production organization of leading world producers, it is quite possible to obtain useful information and arrive at sound conclusions. Decisions on structure and specialization must be



backed by objective criteria, gained from extensive world standard comparisons, together with the other results of analyses and forecasts.

#### FOOTNOTES

1. See Ninth SED CC Plenum. "Aus dem Bericht des Politburos an das Zentralkomitee der SED" [From the Politburo Report to the SED Central Committee], Reporter: E. Honecker, Dietz Verlag, Berlin 1984, p 391. The necessity of the structural perfection of the social production in connection with comprehensive intensification was also emphasized at the CEMA economic summit of June 1984 (see "Statement on the Main Aims of the Further Development and Deepening of Economic and Scientific-Technical Cooperation by the CEMA Member Countries," EINHEIT, No 7/1984, pp 597ff.
2. Though this article is most concerned with the relations between the structure of output and exports, we must always remember the unity of exports and imports. Any reflection and decision on the structure and increase of our export capacity relates directly and indirectly to imports and the international division of labor in the unity of export and import structure arising therefrom.
3. Marxist literature has long dealt with the factors affecting the development of national structures and the international division of labor. Let us recall the fundamental principles of the international socialist division of labor and the studies by the Soviet economists Bogomolov and Shiryaev. It is also possible to find some detailed explanations of the direction and intensity of the effects of individual factors (see K.Morgenstern, "Sozialistische Internationale Arbeitsteilung" [Socialist International Division of Labor], Akademie Verlag, Berlin 1972; K.Morgenstern, "Internationale Spezialisierung und Kooperation im RGW" [International Specialization and Cooperation in CEMA], Akademie Verlag, Berlin 1977). However, the changed conditions and experiences gained since then require further studies.
4. See collective of authors, "Grundfragen der Sozialistischen Reproduktionstheorie" [Basic Issues of Socialist Reproduction Theory], Dietz Verlag, Berlin 1982, p 168.
5. Ninth SED CC Plenum, as before, p 40.
6. V.M. Kudrov, "Trends in the Proportion of Forces of the Three Centers of Imperialism," SOWJETWISSENSCHAFT. GESELLSCHAFTSWISSENSCHAFTLICHE BEITRAEGE, No 4/1982, p 607.
7. See 1984 GDR Statistical Yearbook, Staatsverlag der DDR, Berlin 1984, p 242.
8. See K.-H. Kosser/W. Kupferschmidt, "Experiences and Tasks Relating to the Integration of Foreign Trade Operations in the Reproduction Process of the Combines," WIRTSCHAFTSWISSENSCHAFT, No 12/1983; U. Hoffmann, "Combining Product Development and Marketing," WIRTSCHAFTSWISSENSCHAFT, No 2/1985.

9. See collective of authors, "Basic Issues of Socialist Reproduction Theory," as before.
10. The deployment of costly flexible product engineering definitely requires its complete utilization and, therefore, a large volume of output, though no longer in the meaning of a narrow specialization on one or few types of product variants.
11. In the GDR, for example, that is demonstrated in the further development of industries and products of machine construction, appliance construction, the chemical industry, the glass and ceramics industry.
12. For greater detail see, among others, H.J. Peters, "On the Perfection of the Production Structures in the CEMA Countries in the Process of Socialist Economic Integration," WIRTSCHAFTSWISSENSCHAFT, No 10/1979; collective of authors, "Wirtschaftliches Wachstum Europaeischer RGW Laender" [Economic Growth of the European CEMA Countries], Akademie Verlag, Berlin 1981, pp 135ff; collective of authors, "Sozialistische Oekonomische Integration und Intensivierung" [Socialist Economic Integration and Intensification], Dietz Verlag, Berlin 1984, pp 48ff.
13. G.Mittag, in "Nach Neuen Massstaeben die Intensivierung Umfassend Organisieren" [Comprehensively Organizing Intensification by New Criteria], Dietz Verlag, Berlin 1984, p 27.
14. See also M.Buechner/H.Willems, "On Some Issues of the Further Processing of Energy Sources, Raw Materials and Other Materials in the Conditions of Intensively Expanded Reproduction," WIRTSCHAFTSWISSENSCHAFT, No 9/1984, p 1321.
15. G.Mittag, in "Mit Hoechsten Leistungen den XI.Parteitag Vorbereiten" [Preparing for the Eleventh Party Congress by the Greatest Possible Performances], Dietz Verlag, Berlin 1985, p 54.
16. Ibid.
17. In this article I am able only to indicate some aims of the necessary further development of international specialization and cooperation for resolutely promoting intensive growth and structural change. For details see collective of authors, "Spezialisierung und Kooperation Zwischen den RGW Laendern" [Specialization and Cooperation Among the CEMA Countries], Verlag Die Wirtschaft, Berlin 1984. On the topic of relations between intensification and socialist economic integration see, among others, "Sozialistische Oekonomische Integration unter den Bedingungen der Umfassenden Intensivierung (Thesen)" [Socialist Economic Integration in the Conditions of Comprehensive Intensification. Theses], WIRTSCHAFTSWISSENSCHAFT, No 1/1985; H. Swoboda, Socialist Economic Integration and Intensification of the National Economies of the CEMA Member Countries, WIRTSCHAFTSWISSENSCHAFT, No 11/1984; W. Kunz, "Socialist Economic Integration and Comprehensive Intensification," EINHEIT, No 12/1984.

18. See "World Standard Comparisons--Prerequisites for the Improvement of the Economic Efficacy of Science and Technology," HEFTE ZUR SOZIALISTISCHEN BETRIEBSWIRTSCHAFT, No 23/1984, Dresden Technical University, Section Socialist Business Management.

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ECONOMY

BULGARIA

# IMPROVED, MODERNIZED ECONOMIC MANAGEMENT RECOMMENDED

Sofia TRUD in Bulgarian 19 Oct 85 pp 1, 2, 3

[Article by Ognyan Panov: "For a New Quality of Economic Activity and Its Management"]

[Text] In the life of each person there are moments when he must consciously, by his own will, give up certain obsolete ideas and habits. This comes with age, under the effect of circumstances and the new role which a person must assume in life. It is not that these habits were harmful or bad but merely that they did not meet the new times in which he lives and if he does not change them, they truly become an impediment in his further life and work.

This happens, for example, in exchanging the school bench for independent employment or in moving from shop work to management and so forth. Circumstances in life are numerous and most diverse. The important thing is to promptly spot the moment, to adjust one's value system and to change the methods of one's thinking and action.

Something similar is now occurring in our social life, in the process of creating and developing a socialist society and primarily in economic management. Analogies always involve the risk of not being correctly understood or not correctly reflecting the main idea, but it seems to me that here there is much in common.

A socialist society is a consciously built and fundamentally new type of society, with new social relations which do not occur spontaneously, if there were not the leading role of the party, the subjective factor and the will of the new social force, the proletariat, and the desire of the masses and workers. In the process of social development, socialist relationships are developed and mature. Already society can play a new role both in the world, as an example of emulation as well as internally in creating a new way of life. A move is being made to a new quality of social relations. This requires a reshaping of thought and action in order not to impede progress and not to burden down the new with undesirable vestiges from the old.

## The Objective Necessity of Modernization

The necessity of qualitative changes in the development of social relations and particularly in economic activity and management has arisen simultaneously under the impact of the intrinsic maturing of society, under the transition to building a developed socialism as well as under the effect of new circumstances in the world related to the developing unprecedented and unforeseen scientific and technical revolution as well as with the new stage in the historical clash of socialism and capitalism, that is, the necessity of achieving not only a military but also an economic parity.

The new conditions in the life of our society which predetermine the nature of the management system have come about somewhat imperceptibly before our very eyes and with the direct involvement of the generation which at present must make the changes in social awareness and in social actions. The years are not far distant when we spoke of nationalizing industry which was miserably small in comparison with today, of forming cooperatives of the broken up and poor agriculture and making literate thousands upon thousands of workers. At present, we must carry out a selective strategy of scientific-technical progress, electronization, robotization and laser technology, high-quality metallurgy and heavy machine building. We must seek out the optimum structures for our agroindustrial complexes, we must work out new farming methods and program the yields even when nature is against us. We must assimilate world science and create a science and technology on the level of world examples. We must....

All of this at present cannot be done in following the same methods and the same schemes as we did when we rejoiced over every new plant without taking an interest in its technological level, when we accepted any product, when we were content to have enough of it for everyone and export what we had. The productive capital cannot be managed in the same manner as 35 years ago when there were 10-fold less, let alone the greatly more complicated production relations between them. We cannot and must not manage economic activities in the old manner as we did when we had to concentrate all monetary, material and labor resources in one center if we wanted to achieve something significant. At present, much of what at one time was beneficial and necessary is already a handicap and even harmful for further development.

## The Key Role of Management

With good reason the party has set the principle of revolutionary thought and action and has worked steadily to change the obsolete economic mechanisms and for new strategic thinking (and not day by day!) in economic management and for new relations between the owner and manager of what has already become essentially unified socialist property. Changes are imperative everywhere but first of all in economic management because it determines first of all whether we invest capital investments only in projects essential for society, whether we buy not obsolete but the most highly productive equipment and modernize products according to social needs, whether we improve (and not worsen the quality) and do not waste wholesale the raw products, energy and materials, we do not export national income and many other things. Ultimately even discipline and the attitude of the individual worker to his work depends upon

economic leadership. For this reason, in my view, the "critical path" of our essential revolutionary changes in social development now runs through economic management. Certainly, not only the management which presently involves a small managerial elite or even the entire administrative managerial apparatus which comprises over 10 percent of all the persons employed in the national economy, but rather that management which involves all the workers through their labor collectives. Consequently, the essential changes in economic management involve all of us and no one has the right to say that this does not apply to me and let the responsible factors solve the problems. The problems of improving management involve all the workers and depend upon the mass of workers.

#### Preparation of the New

The party has long raised the problem of changing the management system. Initially, some 20 years ago, this involved the new system of planning and management, after which the accent was on the new economic mechanism and a new economic approach was worked out for the direction of the changes. At present, all of this is related to the use of the top achievements of science and technology and to carrying out the scientific and technical revolution in our country combined with the advantages of the socialist social system.

Many things have already changed in economic activity. Production is oriented at sales. Economic leaders already know who are their basic competitors. The world level is being watched and ways are being sought to modernize products and production methods. Cost accounting is being worked out more precisely and applied at the enterprises. Significant funds have been established for the economic units. The labor collectives have shown greater activity, particularly in the brigades.

But what has been done in the area of the development and improvement of management is far from satisfactory. Strong centralization of planning has basically been maintained. The hands and steps of the economic leaders are still tied by the diverse forms of direct state interference. Contact with the market is mediated by the foreign and domestic trade organizations which operate in the old manner. The pace of scientific and technical progress is low although there is a strong appetite for capital investments on all economic levels. Work is done day by day, without assessing the forthcoming difficulties or new opportunities and without first setting measures for overcoming the difficulty or utilizing the opportunity. The limited resources which we have are wasted, without analyzing the most effective method of utilizing them.

Other facts could also be given which can be found in one or another form in the assessments of the major party forums and in many reports, speeches and articles of Comrade Todor Zhivkov. A social attitude has been established for overcoming them. At present, the most important problem is the seeking out of ways to overcome the shortcomings and establish a new favorable economic climate which will help to accelerate all scientific-technical and socioeconomic development in the nation.

Obviously, there are many things which must be resolved in order to achieve qualitative changes in economic activity and management, but the main thing, in my mind, is the following:

- 1) Management by interests with effective motivating of the collective and personal activities;
- 2) The establishing of new relations between the owner and manager of the socialist property;
- 3) The use of the achievements of modern science and technology in the management system;
- 4) Establishing a new role for the labor collective in economic management.

In this regard there are clear party instructions but practical actions require a creative approach from everyone and on all levels. A change can come about only through the conscious actions of the working masses.

#### For Management By Interests

There have been many maxims concerning the role of interests in social life. Both Marx, Engels and Lenin repeatedly emphasized their importance also under socialism. It cannot be said that management up to now has been carried out without considering economic interests. The problem has been that interests have been shaped and supported which are directed the wrong way.

Even at the start of our socialist development, it was necessary to overcome the acute social inequality inherited from the bourgeois state, but in struggling against this wage leveling was allowed to be established. And at present, everyone knows that regardless of whether one works well or poorly, there is a guaranteed wage for everyone. As there was not unemployment, aside from those who did not want to work, there was no danger of not receiving a wage. Thus, gradually misshapen interests were established concerning the minimum effort for a job in the system of the social economy. But at one's job the income was covered by a lid which was difficult to escape, regardless how effective was the work of the individual and the collective.

At the same time, the channels of state patronage were thrown wide open in the area of artistic creativity and there were unlimited opportunities for income by work in the regulated and unregulated private economy. There at present strong economic interests are at work there and the efforts of people are naturally focused on this area. Not the creators of scientific-technical progress, not the employees in state enterprises but rather certain representatives of the arts, self-employed repairmen and construction workers and the producers of fruits and vegetables from the private farms can earn high income if they work. It is true that in the social [nationalized] economy it is possible to earn high income, but only when one uses this as one's own at the expense of the injured clients or the interests of the state. There are no private butcher shops but there are many rich butchers. In the service sphere it is generally accepted that income is received outside of wages directly from the citizens without any control or taxation, according to

the ability of the servicers to "make money." In this instance, wages are just a pure symbol because they comprise only a small portion of the real income. But they are very important from another viewpoint as they provide social security and status in society. Income from intense labor on a private farm will arouse more envy than the income earned by the abuse of state work. Misshaped interests misshape social conscience.

The state has strong levers to shape economic interests. But we have neglected them very long and have already paid the tribute of dogmatism, that is, the disregarding of the laws of commodity-monetary relations has not done away with them. They always operate when there is a sale but they operate against us when the related levers of economic incentive are not employed.

Obviously, we must carefully review the entire system of economic levers for encouraging effective, socially useful economic activity and the primary condition for this is that every activity involving a sale be under state control and state regulation. Otherwise a parallel "shadow" economy is established which the state does not control but society tolerates because it satisfies certain needs. Such an economy undermines the unity of the socialist economic system and is a potential source of serious social tension. To put it briefly, all individual incomes must be declared, monitored and taxed in such a manner as to prevent unsound enrichment from the use of market conditions.

At the same time, however difficult it may be in practice, it is essential to consistently apply the principle of basing wages on results. This means the labor collectives by wages feel the results of their labor and in this manner are interested in acting as a manager. If we continue the practice of confiscating effective results and having the state compensate for poor work, no economic incentives for effective labor can be established. But even worse this undermines the basic principle of socialism of "to each according to his labor" and consequently undermines the bases of socialist social relations.

Certainly, in order to direct society at what is the main thing for it, that is, the realization of the scientific and technical revolution, it is essential to immediately reconcile the incentives for the scientific-technical and artistic-creative intelligentsia.

Along with this it is correct to emphasize that material incentives are only a portion of the present motives for effective labor. It is essential to improve the forms of moral incentives, the incentives for achieving a certain social status and so forth. It is particularly important for the socialist competition to get rid of the formalism and show and serve really as a powerful means for the realization of the individual. Selection and the competitive principle are also exceptionally important means for correctly motivating the individual. They are an inseparable part of the management system by interests, by the effective motivation of the individual and the collectives.



## For Establishing New Relations Between Owner and Manager

The establishing of a unified socialist property has necessitated a new allocation of state functions between its central and local bodies and the economic units. Exceptionally important also is the thesis of Comrade Todor Zhivkov on this problem, as it expresses profound objective patterns in socialist development which we have not yet mastered and are still not able to fully utilize. Here it is not merely a question of one or another combination of centralization and decentralization in the decision-making process but rather of the distribution of management functions in a new way in carrying out economic activities as well as a new attitude toward socialist property.

At present, the corporations, trusts, combines and enterprises are not responsible to society either for satiating the domestic market with goods and services, for winning and retaining market positions abroad, for the lag in scientific-technical and technological development behind direct competitors, for unutilized production capacity and unemployed capital investments. The state regulates all of this through its plan while the economic units are left solely to struggle for a reduced plan and do not endeavor to satisfy demand but rather to fulfill the standards and quotas which are set for them from above. Thus the state itself cannot follow the nationwide interests because it is involved in petty economic problems of the individual organizations. And when we look long at the individual trees, it is easy to overlook the forest.

It is essential to create conditions for the economic units where they themselves will assume full responsibility for the activities for which they have been established and their assessment both in the economic and social sense will be based on the degree of satisfying social needs with a maximum effect for the national economy. This means that goals will be clearly set for them and they themselves will be left to show economic initiative, creativity and ability in order to resolve the arising problems. This is precisely the essence of the ideas of the February Plenum concerning the self-regulating systems which now must be realized in real new economic relationships.

However paradoxical it may sound, it is not the economic mechanism but rather bureaucratic, administrative interference which is the main obstacle in realizing the self-regulation principles. When there is self-regulation, the mechanism will adapt in such a manner that a real incentive and economic responsibility will be created. But at present in practice we assume that an economic leader can act with the necessary sense of responsibility only if he has worked a minimum in a ministry. Accordingly the ministries in essence take in hand the inferior-level economic leaders and endeavor to always confiscate by bureaucratic means the funds which would allow them to act independently. This kills not only any incentive but any opportunity of functioning independently and hence for the responsibility of the economic units.

This does not mean the elimination of administrative mechanisms. Without administration it is impossible to have management. Rather it is a question of eliminating the bureaucratic disdain for the independence of the economic

units and this is the basic "stumbling block" in economic management. In my view, the main thing for eliminating it is control and aid from the party leadership of various levels over observance of the declared relationships between the state bodies and the economic organizations. Precisely a political approach at present can help to the greatest degree in realizing the economic approach.

#### For Scientific-Technical Progress in Management

We are all aware of what an enormous leap has been made by the productive forces over the last 30 years in our nation. The complexity of the resolved managerial problems has increased by many-fold. Certainly this period has witnessed the growth of management personnel in terms of quantity and training which are capable of resolving the most complicated problems. But this is not enough. Human potential must always be supported and developed through the use of science and technology in management. This question at present is a key one throughout the world. But we already lag seriously behind the countries which are most developed in this regard.

The reason to a certain degree resides in the low saturation of management with fixed capital, as is said, for "production ends." Virtually all fixed capital in management and which as a total amounts to a good deal consists of buildings and classic furnishings. What is most essential for labor productivity, that is, computers for collecting and processing information, stands away from the work place of the management worker. It is in computer centers which in and of themselves are few in number but, what is most important, are not directly linked with the management services. Certainly we could saturate the services with office equipment. Our nation is one of the major producers of electronic computers. We already are producing personal computers which make it possible for each place in the management system to be provided with computer power equal to that which the computer centers operated by scores of people had 5-6 years ago. At present, the leader, the secretary and the specialist can and should independently operate the computer. But precisely here lies the main difficulty in automating the management processes.

Certainly there are a number of problems which must be resolved in computer capacity or, as the specialists say, in the "hardware." But there are more

problems in supplying suitable programs for processing the information, or as is said, the "software." But the most complicated are the problems involving the organization and technology of management with the incorporating of this costly equipment in managerial activities and the utilizing of the information provided by it. At present, the main thing is to create a basis of managerial technology which would organically include the data files stored in the computer memory and provide a solution, as is said, in "real time," that is, in the actual time required to resolve those problems which would optimize the decisions or even check the possible alternatives for action and assess the expected results. The very work with the machine disciplines the management specialists and forces them to seek out and handle accurate and complete information and focuses them on a thorough assessment of the decisions taken and the possible consequences of this. This is called the application of the

systems approach in management practices. Its application greatly increases the quality of management and reduces the risk of possible bad results. Because the aim is not to assume economic risk flippantly but rather to plan the work in such a manner that the risk is minimal. Certainly, it is impossible not to have risk in management, but this must be well reckoned and assessed.

One of the main tasks at present in management is the mastery of the computer industry. As was the case 40 years ago, children and adults will be made literate but on a much higher level for encountering and becoming partners with an artificial intellect which broadens the limits of human capabilities to an unprecedented degree. Along with this it is essential to also prepare the computers so that they are on an equal level with the human intellect. It will be essential to have expert systems, automated "office systems" and other modern scientific achievements designed to improve the quality of management. Certainly there must also be an ongoing rise in the managerial skills of everyone employed in managerial work. Because work in management is a very responsible and important profession for society.

#### On the New Role of the Labor Collective in Management

V. I. Lenin repeatedly pointed out that socialism had an unique opportunity to increase the capacity of management by a thousand-fold, in involving the working masses in management and in providing their direct involvement in resolving managerial problems. This also is of enormous indoctrinational significance because in this manner true managers of socialist property are indoctrinated, as well as new citizens with socialist awareness.

For a number of historically determined circumstances we still do not use this opportunity which is objectively necessary for mature socialism. Moreover, in spite of the exceptionally profound and scientifically based party concept of the new Labor Code, in practice many things have not yet changed. Managerial potential still continues to be restricted to a relatively small team in the central leading bodies because everything must be approved "higher up" and "responsibly." It is easier this way, because responsibility is dissolved somewhere in an hierarchical system. It remains merely to carry out something which can always be changed without any particular consequences for the persons carrying this out. Thus instead of the qualities of managers they instill the qualities of executors but without the real responsibility for the quality of execution.

At present we must have a true decisive about-face, as the party has pointed out, to involving all the workers in management. The turning of the labor collective, the brigade and the enterprise into the "most collective" of all collective management bodies will give new value to management activity. This does not and cannot occur under capitalism and we cannot take any ready-made plans from there. This has nothing in common with the "self-rule" in certain other countries. For this reason we ourselves must hit upon the measure in this complex matter, following the sociopsychological characteristics of our people and relying upon its repeatedly proven political maturity.

The main thing is that the labor collective must become a participant in the strategy and tactics of economic management for the development of economic

activities and for increasing its effectiveness. It is even more important to foster control and self-control in the labor collective for high quality and efficiency of production, labor and management. Only the conscious labor of the masses and the vigilant social control of the workers are capable of providing a new leap forward in the dream of the future so quickly and easily as this has been done in the post-April years up to the present. But this path of accelerated development at the same time requires not only enthusiasm but also great organization and discipline. This will become a reality when self-organization and self-discipline become an everyday feature in the labor collectives. For this reason it is essential to protect the rights and responsibilities of the general meeting, to avoid formalism and seek the full disclosure of the creative potential of the workers.

This article is conceived of as a part of the interesting discussion developed on the pages of the newspaper TRUD over the article written by D. Atupov. Indeed I will not take a stand on the opinions of other participants in the discussion but this in my mind is not necessary. It is enough to state constructively one's own opinion because a solution to the complex problems of modern economic activity and management requires diverse analyses and studies. The more opinions the better. Specialists call this not a discussion but rather "brainstorming." The problem merits an effective "brainstorming" also in the mass information media. The main thing is not to create the impression that someone else must solve the problem but rather that we ourselves must offer reasonable proposals. The improvement of management and the raising of it to a new qualitative level are a concern of all the workers and no one has the right to shift his share of this general responsibility to others, regardless of how small this share may be. Only coordinated, common efforts can provide rapid and major results.

10272

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ECONOMY

CZECHOSLOVAKIA

MANPOWER RESOURCES IN CSSR

Prague RUDE PRAVO in Czech 12 Dec 85 p 3

[Article by Vaclav Marek: "Do We Have a Shortage of Manpower?"]

[Text] We have the opportunity of asking this question repeatedly. We hear far too often from leading economic workers, when some problem needs to be solved, the unambiguous argument which renders further discussion impossible, namely that there are not enough people to do the job. And that is that. However, what is the situation with respect to the adequacy or inadequacy of manpower in actual fact?

Let us first look at some data. In industry as a whole for the year 1984 there were 2,591,200 job opportunities, but only 1,856,400 jobs encumbered. This means that in industry there were 734,800 unoccupied positions. Last year, enterprises asked for 42,000 new workers. National committees only confirmed 38,000 persons for these jobs, but, in actual fact, only some 25,000 people entered the work force.

Let us return to the data which say that each day industry continues to have 750,000 unencumbered jobs. How could such a situation develop? Through poorly considered investment policy. For example, in the engineering industry more than 2 million square meters of production area was added during each 5-year plan and little consideration was given as to who would work there. Over the past 7 years, industry has recorded an increase of 73,000 jobs but the number of workers only increased by 62,000. Similar discrepancies continue at the present time. From this it is evident that few people gave much thought to what it means to manage manpower intensively.

New basic assets lack workers but many people are tied to very old machines which are not very productive. Basic mechanical assets in industry have an overall value of Kcs 500 billion, but what does their structure look like? The average age of machines is 12 years but the period of their utilization extends to as much as 24 years. The share of fully written-off machinery exceeds 19 percent. How productive can work with such machines be? It would be more sensible to eliminate such jobs and to transfer people to reconstructed processes. But the renewal of machines has been slow for years; every year not quite 2 percent of the machines in the production sphere are eliminated. And what does this lead to? While the capital asset ratio is increasing the

effectivity continues to decline. So that what appears to the outside to be a shortage of workers is, in effect, a surplus of little-utilized and ineffective capital assets.

And this then leads to another reason why we cannot seem to manage with the manpower resources which we do have. It is generally known that highly qualified work is the most valued type of work. But what is the current structure of our manpower? Of the overall number of jobs in industry, 874,000 are manual labor jobs.

Let us take a closer look at the engineering industries. An entire third of the workers is actually engaged in nonengineering activities: 88,000 workers are engaged in transportation, warehousing, and materials handling. And this industry also has 15,000 charwomen.

The nature of the work performed by 350,000 workers is such that it justifies their inclusion in the lowest tariff category, category D-3 through category D-5; 80,000 workers are engaged in assembly work and an equal number are engaged in other simple but frequently physically taxing service and auxiliary work. This clearly represents large reserves in managing manpower resources and documents the low utilization of the findings of science and technology.

For example, it is known that some 2 million people in the republic are engaged in materials handling. It would be most necessary to replace their work with modern technology. However, it has been shown that these requirements are not covered in the Seventh 5-Year Plan to an overall value of approximately Kcs 31 billion. The production of warehousing and materials-handling technology is scattered; it is taken care of some 116 organizations which are subordinated to 12 organizations of the federal and national level.

Reserves in the utilization of worker education, on which society has expended considerable sums, are no less significant. Let us take a few items of data from Slovakia. Approximately 30 percent of the functional jobs which require advanced school or specialized middle school qualification were occupied by workers with a lower education, frequently only with a basic education. On the other hand, in the entire republic, every 10th advanced school graduate and every 5th middle school graduate is working at a job which requires lower qualifications.

The national economy employs 7,580,500 people. In essence, every other citizen of the republic is engaged in the employment process; we have one of the highest rates of employment in Europe. And it is only with difficulty that this can be increased.

From 1950 through 1980, the overall number of workers in the national economy increased by 1,842,000 people. The average annual increment was thus 61,000 people. And what will it be in the future? Some of the current studies anticipate that by the year 2000 there could be about 850,000 new members of the labor force.

From the above it is clear that almost all manpower resources which are available are engaged in the working process. However, we must free up a portion of this manpower to prepare them for future professions. During the past 30 years, the number of people preparing for a profession increased by approximately 130 percent and, in 1980, their numbers reached virtually 874,000. In the majority of cases these are young people and it would be imprudent to hasten their entry into practical work at the expense of thorough preparation for a profession.

Where, then, can we seek additional manpower? A great force is represented by those who express preference to perform further work for society before their deserved retirement. Currently, there are 670,000 working pensioners who are drawing old-age benefits. It is not possible or profitable to increase their numbers.

Additional manpower can truly not be obtained anywhere. What are we to do? From the above, it is clear how many losses are caused by poor management of manpower. But the main path toward a remedy must be seen primarily in the application of scientific-technical progress in production technologies.

To illustrate: flexible production systems which represent one of the contemporary peak technologies, make it possible to attain 200 to 400 percent higher production on an area which is half as big as that occupied by contemporary technologies and require 50 percent fewer production workers and about 50 percent fewer administrative workers. Such possibilities are offered by scientific-technical progress.

Technical development offers an enticing perspective but a more rapid renewal of the machine inventory imposes one condition--new machinery must be thoroughly utilized. Otherwise, the replacement of human labor would cost too much. But what do statistics show? According to investigations, usable machine time is utilized roughly 68 percent. Fully automated machines work an average of 11.5 hours a day. Machines imported at the cost of foreign exchange are used 70 percent of the time, machines obtained from socialist countries are even utilized only 58 percent of the time. It is well known that the level of our shift work rate is one of the lowest in the CEMA countries.

Without fundamental changes in the above-mentioned facts it is difficult to consider new machines, expensive reconstruction and modernization, in other words, even the freeing up of manpower resources.

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ECONOMY

CZECHOSLOVAKIA

ECONOMIC PUBLICATION VIEWS HUNGARIAN REFORM

Prague SVET HOSPODARSTVI in Czech No 125, 1985 supplement pp 1-4

[Unattributed article: "Economic Mechanisms of CEMA Member Countries: Hungary"]

[Text] The People's Republic of Hungary (hereafter MLR) is an advanced industrial country with an efficient agricultural sector. In both territorial area (93,030 square kilometers) and population (10.7 million in 1984) it is among the smallest of the European CEMA countries. In addition to its low population, the MLR is characterized by slow population growth rates. Its only significant natural resource is bauxite. The serious limitations on domestic primary raw material and energy resources is also one of the reasons for the great dependence of the national economy on foreign trade. Exports account for about 50 percent of the national income. The disadvantages inherent in the restricted supplies of natural resources and territorial location are partly offset by favorable natural conditions for agricultural production and by the importance of Hungarian territory for international surface and river transport. Industry and construction account for 58 percent of national income formation and 39 percent of total employment. Agriculture accounts for 18 percent of national income and 22 percent of the work force. The state and cooperative sectors combine to generate 95-96 percent of national income and employment, with the private sector accounting for the remaining 4-5 percent. Hungary is one of the few CEMA countries belonging to the International Monetary Fund and of the International Bank for Reconstruction and Development.

By the mid-1960s the MLR, along with a number of other socialist countries, faced the pressing need to switch their national economies to an intensive development path. This was supposed to be facilitated by a carefully formulated economic reform, the most important measures of which took effect in 1968. Enterprises were given significant authority to select, set up and market the output of their own production programs, with the main yardstick for their operations becoming net profits. The focus of central planning was shifted to the area of the medium term determination of important economic indicators such as overall growth rate, national economic equilibrium, etc. Under conditions of increased enterprise autonomy and the concentration by central agencies on key national economic



objectives and relationships, economic mechanisms have to a large extent replaced the previous task of making a detailed plan breakdown. The basic aspect of the 1968 economic reforms has been universally acknowledged to have been the integration of planned, centralized national economic management, market price relations, and an active role for the market based on socialist ownership of the means of production.

The guidelines of the Hungarian Social Democratic Party [MSDM] Central Committee for the 13th Party Congress stated: "The economic policy of the party encompasses both the general laws of socialism and of the conditions of the MLR. A socialist planned economy based on public ownership of the means of production, and regulated by goods, financial and market relationships contributes to the establishment of a socialist society and the achievement of fundamental socio-economic goals."

There have been several stages in the implementation of these changes in economic mechanisms that began in 1968, as well as during the development of the reform project. The last such stage was programmed principles for the development of the management system during the second half of the 1980s. This was approved at the plenary session of the Hungarian Social Democratic Party's Central Committee [MSDS] in April 1984. These principles have in a number of instances already been implemented. For this reason it is not easy to describe the current form of the economic system of the MLR.

#### Organizational Structure of Management

The most senior agency of state authority is the National Assembly of the MLR, which includes the MLR Presidium. The senior agency of state economic management is the council of Ministers (at the governmental level). At the same level as the council of ministers are the State Planning Office and the Economic Commission. The first of these develops long and medium term plans and concerns itself with improving the economic system; the second coordinates the work of other state offices that deal with the implementation of national economic plans and manages foreign economic relations. Directly subordinate to the council of ministers is the Research Policy Commission, which develops guidelines for science policy, manages their practical implementation and coordinates scientific research efforts and technical and economic development tasks.

The council of ministers oversees the work of sectoral and intersectoral offices: these include the State Planning Committee, the State Committee for Materials and Prices, the State Technical Development Commission, the Hungarian Standards Office, The State Office for Labor and Wages, the Supreme Court (economic disputes are resolved by a special court collegium), the Ministry of Finance, the Hungarian State Bank, etc.

The national economic sectors are managed by the ministries, which are in turn subordinated to the council of ministers - the ministry of construction and urban development, the ministry of transportation, the ministry

of agriculture and the food industry, the ministry of domestic commerce, and the ministry of foreign trade. Since 1981 there has been a single ministry of industry responsible for managing the specialized fields of power generation, metallurgy, machine building and instrument production, chemicals and light industry. In July 1983 the Hungarian Postal Service was split off from the ministry of transportation and communication as an independent state office subordinated directly to the council of ministers.

Economic organizations function according to a 1977 law concerning state enterprises, which defines the following 2 categories of enterprises:

1) The state enterprise, which can be composed of production units such as a factory, branch, or workshop. This is the predominant form of economic organization. A majority of state enterprises are large units, 45 percent of which have more than 1,000 employees. A number of these large enterprises account for most or all of the production of a given field. A state enterprise is a legal entity, and the authority of its production units is limited.

11) A trust is an economic organization similar to an enterprise. A trust and its constituents (enterprises) are legal entities. Their ties to the state budget run through the general directorate of the trust. A trust has the right to reallocate the assets of its subordinate enterprises.

Also important in the economic life of the MLR are cooperatives, trades, retail trade and a number of new forms of supplementary and auxiliary economic activity such as enterprise managerial-labor associations, the members of which perform a number of tasks during their free time utilizing enterprise assets.

Production cooperation among enterprises of various sizes and sectoral classifications is evolving mainly on a contractual basis. Since 1978 enterprises, cooperatives, other economic organizations, as well as legal entities that are not economic organizations have been able to form voluntary contractual joint enterprises, deposit associations, or associations for coordinated economic activity. The action of forming these associations is recorded in the minutes book of the enterprise and is approved by national committees. An association is managed by a council of directors and leadership is elected if this is deemed necessary. Supervision and control is performed by the ministry of industry and finance, which have broad authority ranging from consultation and recommendation through the dissolution of the association.

Links between R&D and production (work at research institutes on orders from industry) are evolving mainly on a contractual basis.

In 1982 the restructuring of R&D was begun along two lines:

1) Temporary research organizations formed to resolve definite R&D tasks, including the practical implementation of R&D results;

11) Research organizations of an enterprise type involved in the practical introduction of R&D innovations and operating on a contractual basis with other economic organizations.

Since 1980 the breaking up has been under way of excessively large, mainly horizontally organized enterprises and trusts. In the future the number of medium sized and small enterprises will increase both because of this breakup and because of the startup of new smaller firms. Cooperation among enterprises will evolve in this environment of maximal vertical internal sectoral and intersectoral integration. Large enterprises, even though they will continue to be the foundation of industry, will thus be freed from unprofitable small run production, which will become the speciality of the medium and small companies. This will result in a kind of flexible backup for the large enterprises which will be able to react quickly to changes in the domestic and foreign market.

As stated in the MSDS Central Committee resolution of April 1984 "it is necessary to implement effectiveness criteria and foster economic competition among enterprises through government activities and the development of an institutionalized system of economic management and an organizational system for enterprises. We must proceed purposefully in organizational modernization. Enterprise size must adapt to the requirements of efficiency and production. It is essential to improve cooperation among state enterprises as well as between enterprises and cooperatives. We must expand the range of enterprises and cooperatives that enjoy the right of independent commercial activity. It is essential to strengthen those conditions which assure that enterprises and cooperatives will have incentives to change their activities flexibly, so as to react to the demands of the foreign market, producers and the general public."

The banking system is in a state of flux. The objective is to expand its currency function and to assure that growth in the role of credit and a strengthening of commercial relationships will expand opportunities for entrepreneurship. The efficient grouping of resources must be facilitated consistent with economic interest.

Industrial enterprises and certain other organizations participate in the management of foreign trade activities with specialized foreign trade enterprises under the jurisdiction of the ministry of foreign trade. Branched contractual relationships between foreign trade and industrial firms, by means of which foreign trade authorization may be granted, are typical of foreign trade management.

#### Planning and Management System

Long range (10-15 years), medium term (5 years), and annual plans are formulated, as well as centralized developmental programs which are approved at the level of centralized management.

Long range plans include the most important guidelines for national economic development and have about 30 components grouped by sectors.

Central development programs are approved within the framework of the 5-year plan for economic and social development and are one of its most important elements. Programs link together production targets, resources and investments, thus making it possible to manage programs in accordance with national economic requirements. During the current 5-year plan centralized development programs are in place for utilizing natural gas and for the development of the aluminum, petrochemical, and computer industries, for the development of selected sectors of the electro-technical industry and the production of chemicals for protecting plants and for medicines.

At the central level of national economic management programs are adopted only in the event that the need has arisen for important structural changes in the economy. Most such programs are developed based on decisions of the state Planning Office. For each program tasks are approved, including; quantified final objectives, technico-economic objectives, deadlines and costs for program implementation, investments, and tasks for the enterprises that will play a major role in program implementation, etc.

Many programs are adopted for R&D and the conservation of raw materials, fuels, materials and other resources. For the 1976-1990 period 20 R&D programs have been developed, of which 14 have been incorporated into the current 5-year plan. Program financing is being handled mainly through loans and enterprise resources.

The 5-year plan is the basis of the centralized management of the national economy. It includes a set of goals and decisions concerning resources for their implementation. The goals include the growth rate of net material product and national income, sectoral and territorial allocations of investment resources, growth rates for individual sectors, objectives for R&D, foreign economic relations, employment and the standard of living, state reserves, area development.

The resource part of the plan contains state decisions concerning investments (construction of new enterprises, reconstruction, etc.) as well as objective-allocated resources (for housing construction, transportation infrastructure development, principles of price formation foreign trade operations, financial and credit policies and wages, conditions for the formation and use of resources for area development).

Five year plans are approved by the National Assembly and annual plans by the council of ministers. Plan tasks are not broken down for ministries and enterprises; directive decisions are issued only for central developmental programs, state investments, and concerning subsidies for specific activities and limiting the sales of certain goods. Various forms of directive planning (norms, limits, quotas) are being used to implement state plan tasks related to the fulfillment of obligations under international contracts and agreements, defense obligations, central developmental programs, as well as those related to the use of targeted capital assets to expand the production of certain raw materials.

Annual national economic plans are based on the current 5-year plan and tailor their objectives to current conditions.

To further coordinate the annual with the 5-year plans short term planning is made for one year in the first year of the 5-year plan, in the second and fourth year for 2 years and in the third year for 3 years.

Economic organizations formulate medium term and annual plans, in the process of which they are guided by the national economic plan and the system of economic regulators (prices and the principles of price formation, credit, foreign currency coefficients, taxes, etc.) They take account in their plans of the possibilities and needs of their customers. The linkage between national economic and enterprise plans is facilitated by intensive informational and consultative ties between central agencies and economic organizations.

The planning system is supplemented by the formulation of materials management and income and spending balances. The volume of production, expressed in terms of value, that is included in materials management balances during annual plan formation by the State Planning Office averages 56 percent in industry, 65 percent in agriculture, and 41 percent on the average throughout the national economy.

In the previously mentioned MSDS Central Committee resolution of April 1984 concerning the further development of national economic management it is emphasized that in the future the main task of central management will be the development of a national economic plan and the state budget, the organization and control of its fulfillment, the coordination of economic processes, the development and application of a system of economic mechanisms, and that it is necessary to increase the efficiency of the work of the government and central management agencies, primarily in relation to investment decisions related to the economic structure, and in assuring cooperative tasks with other CEMA countries.

This resolution also emphasized the need to assure, through specific state activities and the mechanism of a regulated market, equilibrium between domestic supply and demand, compliance with legal standards of management, and a struggle against enterprise conduct that stems from a monopolistic position or other conditions that damage national economic interests.

Relationships between economic management offices and enterprises must be developed in such a way that the efficiency of centralized management increases at the same time that the economic independence and accountability of enterprises expands. The above mentioned changes in the distribution of rights to socialist property and the practical application of employers rights between state offices and enterprise management should aid in achieving this. There are 2 new forms of state enterprise management; enterprise councils (for medium size and some large companies), and elected management (most small firms managed by ministries and national committees). Some enterprises designated by the council of ministers will continue to be managed by the current forms (a senior manager named by the founding office, the director's council, and the control commission.)

The central management of contractual marketing activities is the responsibility of the State Commission for Materials and Prices. This commission regulates transactions in the area of supply and marketing mainly through indirect techniques. The commission participates in the formulation of material balances, which are then assured by the State Planning Office; these balances represent calculations only and constitute mainly recommendations for enterprises. With the exception of products designated for particularly important facilities and those needed for defense purposes distribution plans are not set up.

Enterprises themselves undertake all operations related to supply and marketing, including export deliveries and the procurement of material resources through imports. The consumer has the right to choose his supplier. With the exception of centrally allocated types of products the enterprises themselves decide what they will produce and at what price. The state uses economic indicators to channel production and marketing efforts.

Sales of individual products important from a national economic viewpoint are handled by the council of ministers mainly through contingents (an amount of production expressed in physical units that must be delivered to a given group of consumers). Contingents are established annually for 80-100 products (10-15 export products, 30-40 imported products, 20-25 for domestic production and consumption and roughly 10 for the commercial network.

#### Price Formation

The council of ministers determines rights and responsibilities related to price formation among the various economic offices and organizations and approves directives in the area of pricing policy. Based on these, the State Commission for Materials and Prices develops wholesale and retail prices for basic types of production assets and consumer goods and plays a role in their approval. At the same time it established rules for calculations that are binding for economic organizations, forms of price formation, and types of prices. One of the elements of the independence of economic organizations in the area of price formation is the free choice of the most advantageous of the approved price calculation techniques.

The wholesale prices of 65-70 percent of industrial production are formed on the basis of world prices from regions with freely exchangeable currencies, adjusted for boom-related and other fluctuations. This applies to products capable of competing on world markets or which are gradually reaching this level; in other instances subsidies are granted from the state budget, but these are continually declining.

Retail price subsidies are also declining. Wholesale prices of industrial products incapable of competing on world markets, agricultural products, prices for construction, transportation and in other areas are formed on the basis of domestic costs derived from sectoral wholesale prices.

The relationship between supply and demand influences the level of wholesale and retail prices formed by economic organizations. Centrally determined prices also react to these forces, albeit more slowly, through their adjustment by the State Commission for Materials and Prices or by the council of ministers.

In 1983 centrally established wholesale prices accounted for 20 percent of industrial product revenues, while freely established prices (those set by economic organizations based on directives of the State Commission for Materials and Prices and authorizations to raise prices) accounted for 80 percent of these revenues. On the whole the ratio of "fixed" to "floating" prices in material production was 30:70 and in consumption was 43:57.

A short term objective is to reach a point where prices express only socially necessary costs and force producers to manage effectively. A price system and mechanisms need to be developed that would stimulate increased supply, reward quality and prevent the inclusion in prices of the costs of poor management and carelessness. In areas where competitive conditions either have or can be developed the role of supply and demand should be further emphasized. Except in justified instances, price subsidies are to be eliminated. Establishing an organic link between production and consumer prices remains an ongoing task.

#### Economic Organization Levies

The basic for regulating enterprise profits is balance sheet profit. This is distributed according to the following formula:

First any unjustified profits are subtracted and used to compensate affected parties for their losses. Next a community tax of 15 percent is levied by the local national committee for purposes of socio-economic development. Then payments are made on bank loans, repayable state budget subsidies, etc. Likewise, cooperative enterprises make contributions to cover the operating costs of cooperative unions. Since 1984 the possibility has existed to create a reserve from untaxed profits.

The tax rate on profits is 35 percent. This is on top of a payroll tax of 10 percent. From the incentive fund, which is formed from residual profits, and the depreciation fund, which remains intact with the enterprise, a three percent property tax is levied. The enterprise itself makes decisions on the uses of the incentive fund (for enterprise development or for the employees). It must, however, pay from this fund a tax on either earnings levels or their increases and an accumulation tax (0-25 percent depending on economic development; in 1985 the accumulation tax will be 18 percent).

The incentive fund can likewise be used to subsidize the social and cultural fund.

#### Investment

Since the beginning of 1985 changes have also been made in the categorization of investments and thereby as well in the system of decision making

concerning them. Since 1968 there have been two categories of investment: state and enterprise. According to guidelines in force as of 1985 investment decision making should pursue the goal of implementing commercial entrepreneurship in enterprise development. For this reason as well managerial guidelines try to assure that investment decisions be made at levels where the necessary information is readily available decisions can be made with full accountability. Investment strategy formulation is still the responsibility of the state, but the state will not hereafter be involved in investments where the responsibility and risk is borne by economic entities. This implies that four categories of investment will not have to be recognized: central, national committee, enterprise, and investments undertaken on individual initiative.

Central investments will have a narrower scope than current state investments. These are large investment projects with nationwide significance coordinated at the state level, and for which the government is accountable. Centralized decisions will be made concerning infrastructure development, while in industry central decisions will be made only concerning mining (extraction) projects and power generation facilities. Such decisions will involve two steps: first setting the developmental goal and then the approval of a specific proposal. The final decision is made by the council of ministers or the State Planning office if so authorized.

The government makes decisions concerning technico-economic conditions 5 years in advance. The planning and implementation of its objectives, however, is the responsibility of ministries or other appropriate agencies. These include some large public investment projects; in such cases the state plan provides the financial resources while the investment decision rests with the appropriate agency.

There has been a significant change in investment projects that can be authorized by national committees. These include social facilities, housing construction, and public utility investments. The national committees in part obtain the requisite resources from community tax assessments. Prior to making a decision concerning an investment the national committee must solicit public input. These categories of investment, after all, give national committees greater independence, but also greater responsibility and control over their activities.

Enterprises make independent decisions concerning their own investments, finance them, and bear the responsibility and risk of them. In all probability an enterprise will also apply for a loan and the bank will grant it, as long as it agrees with the development goal and method of implementation. Where the state cannot influence the speed of the process and of market adaptation through administrative techniques it intervenes with economic mechanisms such as tax advantages, subsidies, or state loans; it can also grant temporary or full financial assistance, but in the latter case it must demand participation in the capital of the enterprise.

The fourth investment category, investments undertaken with individual initiative, include housing construction and the building of facilities



for small businesses. These projects may be undertaken only if the resources for them exist and if the risk inherent in the decision cannot be transferred to the state.

Conditions are also changing for the granting of investment loans. In order to expand credit possibilities it is necessary to reduce the period of loans. This change is related to the fact that beginning this year the centralizing of depreciation has been eliminated. The payback period for loans is established when the loan proceeds are first released, which means that payment deadlines for construction projects can sometimes be shortened by 1-3 years.

#### Development of a System

A further improvement in the economic mechanism is an important element of the economic and political program of the MSDS. Experiences and results of recent years indicate that the current economic system combining elements of direct and indirect management has proven itself under difficult economic conditions, provided that the goals of economic policy and their implementation have been properly conceived.

Experience has also shown that in terms of better structural adaptation and coping with demanding world criteria we have not proceeded fast enough, despite the fact that reaching world levels of sophistication is becoming more and more essential. The current system of management and measures that have been adopted have not resulted in the mobilization of all the reserves and motive forces at the disposal of the Hungarian economy, at the same time that a critical shortage of capital stock means that changes in the economic system are the most important means for achieving the desired progress. This finding formed the basis of a resolution of the MSDS Central Committee in April 1984 concerning the further comprehensive development of the economic system by improving the system of management and developing the preconditions for achieving fundamental changes in the economy during the second half of the 1980s.

Hungarian experiences gained in the past 15 years show that under the conditions of developed socialism the only economic system that can be effective in the MLR is one which will properly link autonomous enterprise initiative and direct influence through the centrally regulated market mechanism with elements of central strategic management. Retaining this fundamental conception continues to be useful, but some modifications are needed in some of its components. It is necessary to raise the quality of central management both from the viewpoint of strategic management and operative market regulation. Simultaneously, it is necessary to expand the opportunity for satisfying the interests of economic organizations by further expanding and strengthening the possibilities for independent enterprise management. Changes in the organizational structure of economic regulation would also be effective.

Based on the central committee resolution the appropriate state agencies have formulated guidelines for improving individual elements of the economic

mechanism which have been approved by the council of ministers. Necessary implementational measures have been developed based on these guidelines. Some of these even came into force on 1 January 1985.

The basic objectives for developing central economic management relate to three fundamental sectors: national economic planning, market control and regulation, and adjustments to the jurisdictions of managerial agencies.

The national economic plan is the most important vehicle for socialist economic management and will remain so. Its function is the classification of conditions and the analysis of possibilities and objectives of economic development, as well as the reconciliation of ongoing economic processes and the establishment of a system of implementational managerial techniques. Future improvements will include the system and techniques for planning with the specific developmental processes of the upcoming period.

The development of an institutional structure for market regulation can play an increasing role in national economic plan implementation. The main purposes of market control and regulation are to assist in expanding the impact of market relationships, develop economic competition, and to develop equilibrium between demand and supply, while regulation makes it possible to control compliance with appropriate standards and respect for the principles of economic relationships and economic competition in a spirit of socialist morality. Government agencies entrusted with supervisory duties over the market will be equipped with the appropriate legal authority to conduct economic regulation. They can, for instance, make use of interventional inventories, funds, and other intervention measures.

In accordance with changing requirements it is necessary to update the range of authority and division of labor of government agencies that participate in national economic management. It is especially important that a correspondence between planning and direct regulation as well as ongoing government management be provided at a higher level of sophistication than before. Moreover it is necessary to again establish tasks and define the responsibility of individual government agencies as well as assuring better organization and coordination of their activities.

It is also necessary to make changes in the system of economic regulations which will facilitate the more consistent introduction of world economic criteria and parameters. This is especially necessary from the viewpoint of improving the competitiveness of products. We must also provide more latitude for economic organizations to adapt to the above conditions.

In conjunction with the development of market relationships the price system is evolving in a direction that will allow it to represent to ever greater degrees the relationship between supply and demand. A more direct relationship will be gradually introduced between movements in foreign prices and the domestic pricing system. This all demands that administrative limitations be eliminated from the price system, that the system of economic calculations be changed and that price monitoring be further improved.

One may expect changes in the regulatory systems for enterprise revenues that will make it easier to apply more assertively the criterion of return on production assets and thereby to better differentiate between efficient and inefficiently managed enterprises.

Subsidies will likewise be restricted and the tax structure changed. Specifically, taxes on enterprise assets will be increased and taxes on profits reduced. Subsequently the excessive centralization of net profits that was based on a restrictive policy will be reduced. Draws on depreciation will be eliminated, and instead enterprise depreciation funds will be formed on the basis of newly created norms. That portion of profits that remain with the company will go into a single incentive fund, the application of which will be at the discretion of the enterprise within the context of existing regulations. The new tax system can serve for periodic corrections and the moderation of excessive growth.

The improvement of individual economic incentives is of vital importance for the further enhancement of economic regulation and the mobilization of efficiency reserves. In this regard the system of wage regulation is oriented in such a way that the portion of enterprise revenues useable to increase the wages payable fund is directly tied to enterprise performance. To assure that the above principle is implemented alternative regulatory resolutions have been introduced (regulations on wage levels, on wage increases, on central wage regulation). Enterprises may choose the forms most appropriate to their operations. A new system of payroll taxes will provide for the regulation of purchasing power.

The further development of an asset management system is related to the improvement of the economic mechanism, structural changes and measures to increase economic efficiency. Given the probability that increases in the capital stock will be only modest, the more effective use of existing assets is critical. It is therefore necessary to provide for the reallocation of assets: should the potential exist for greater efficiency and higher return on investment it should be possible to draw on the resources of another enterprise or enterprises, i.e. to create the possibility for short term commercial loans among enterprises. Steps are also being taken to further improve the central banking network, under the management of the state bank which will guarantee the possibility of alternative financing.

A substantial increase in the independence and responsibility of enterprises will be facilitated by the introduction of new management forms, within the framework of which the state administration will for practical purposes relinquish the right to allocate enterprise assets and the right of employing will be relinquished to enterprise collectives. The state will retain the right of prior approval and the right of veto over enterprise directors.

The above mentioned directions for the improvement of the economic mechanism will be implemented gradually in the second half of the 1980s. Some elements of the improved system can show results in a relatively short time. A more fundamental turnaround will be evident later on.

ECONOMY

GERMAN DEMOCRATIC REPUBLIC

#### LONG TERM ENERGY MANAGEMENT PLANNING DETAILED

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[Article by Dr Dietmar Ufer, Institute for Energetics, Leipzig: "Long Range Optimal Planning of Energy Management"]

[Text] Even the forecaster should review the past every so often. This is not just useful, but necessary. At least occasionally, the forecasting procedure itself should be the object of his review. Such a review is useful, because it provides information concerning the success of past forecasts. The second object of his review should be the subject of his forecast--in this case energy management.

The GDR has a decades-long tradition in the area of energy forecasting. Georg Bilkenroth [1], Fritz Selbmann [2], Hans-Joachim Hildebrand [3], Kurt Hofmann [4] and Heinz Almers [5] are just a few of a number of experts who decades ago were involved with long-term energy management planning. It is no doubt interesting to study these early forecasts, and in particular to compare the data forecast at that time with those data actually achieved. Such a comparison makes evident considerable quantitative differences between the forecasts and the level of energy management actually achieved. However such a comparison should not be the basis for an attitude of arrogance on our part. Of primary importance is the qualitative information of past economic studies which led to decisions made at the national economic level which are responsible for today's economic management picture. Forecasts made in the 1950s led to the expansion of the VEB Combine Schwarze Pumpe and to the beginnings of nuclear engineering in the GDR. The necessity of cost-saving development of all kinds of energy sources was proven, resulting in the establishment and current activities of the Central Office for the Economic Use of Energy [Zentralstelle fuer wirtschaftliche Energieanwendung] in Leipzig. These are material research results--results which stand up to the closest scrutiny even today, three decades later. Let us hope that our descendants will be able to say the same about our forecasts, made at considerably greater expense!

With regard to those energy forecasts made in the past, we can say that it was commonplace to use regression and trend analyses in determining future trends in development. The 10-year doubling of electrical energy generation is a well known example of such procedures. The development of energy management, precisely in the past several years, has permanently cured us of the belief in

a stable trend (Figs. 1 and 2). Such extrapolations are disadvantageous in that they do not allow qualitative, structural changes to be recognized. And it is precisely now that energy management finds itself in a phase of far-reaching structural changes: We are experiencing a significant reduction in the speed with which the need for energy is developing, and we are currently proceeding on a course of increasing brown coal extraction unknown in the past three decades while simultaneously recognizing the limits of such extraction. We are also scaling back the use of liquid energy sources while at the same time taking preparatory steps toward comprehensive use of nuclear energy.

However it would be a mistake not to review past forecasts at all! Energy management, too, must have its roots in previous development. New quality can only be derived from prior quantitative development. In terms of forecasting activities, it is also important to compare goals to be achieved in the future, e.g. specific energy intensity dynamics, with those corresponding values achieved in the past. A comparison at least enables qualitative assessment of their reality or the efforts which must be made to realize them.

The purpose of the following study of long-term optimum energy management planning structures is not to provide concrete, quantitative forecasts for a period of several decades, but rather to present some "prognosophic" ideas--ideas which were the result of past long-term energy management planning and which are of significant importance for future work in this regard.

There has been recent talk--above all in capitalistic countries--of "decoupling" energy management from the national economy. This means variable, partially opposed growth rates of primary energy and gross national product, for example. In my opinion, such theories cannot be scientifically supported. There continue to be fixed relationships between energy requirements and economic growth, even if they are not in direct proportion to one another.

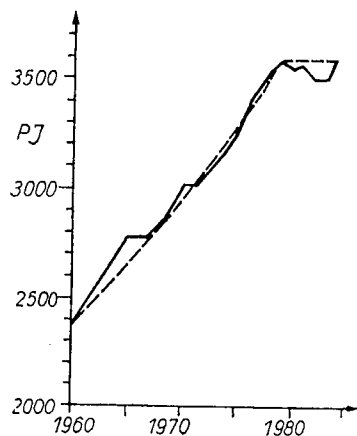


Fig. 1. Primary energy consumption trend in the GDR from 1960 to 1984

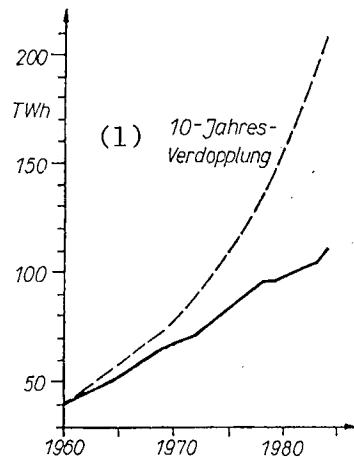


Fig. 2. Electrical energy production trend from 1960 to 1984

Key:

1. 10-year doubling

A direct proportional relationship, by the way, seldom existed in the past. The relationships between these two variables are rather complicated, and have certainly become more so in recent years, however they can be projected.

In the following, a basic equation will be used in an attempt to identify some of the relationships between energy requirements and the development of the national economy. In accordance with the equation

$$\text{In-country PEV} = \text{NE} \frac{\text{GEI}}{\eta_{\text{EU}} (1-\sigma)}$$

direct proportionality between the national income NE and in-country primary energy consumption PEV is considerably affected by the variables commercial energy intensity GEI, overall energy conversion efficiency  $\eta_{\text{EU}}$  and the percentage of primary energy used in the manufacture of goods  $\sigma$ . The above equation can of course be used only in overall, qualitatively-oriented analyses! Which factors affect in particular the trend in commercial energy intensity and overall energy conversion efficiency?

#### Commercial Energy Intensity

Commercial energy intensity is the quotient of commercial energy and national income. Its magnitude is not only determined by the level of rational energy used in individual processes, but also by the percentage of individual processes, i.e. by the material structure of production, and finally by the basic proportions of the national economy, such as the breakdown of the national income into accumulation and consumption. It is not illogical to express the overall commercial energy requirement, i.e. also that of non-producing industries and thus that used in individual homes, and the national income in the form of a ratio: All commercial values are produced in the process of creating new value, i.e. the /total/ [in italics] commercial energy, not just that

energy destined for productive consumption, is generated by the production of national income. In addition, the magnitude of the produced national income is significantly affected, and will continue to be so affected in the future, by the structure and degree of training in the non-productive sphere, because this training ensures the reproduction of labor and thus has an effect on labor productivity. Of course, the individual energy consuming industries must also be separately analyzed and forecast.

In the GDR, commercial energy intensity has always been an extremely dynamic variable. This shows that we have not succeeded in achieving rationalized use of energy just within the past ten years, as is the case in most capitalistic countries (Fig. 3). In the period from 1960 to 1984 we were able to reduce energy use by an average of 2.87% per annum. The trend over the last five years has been particularly impressive at 4.68% per annum.

A number of factors, some acting in opposition to others, will affect future trends in commercial energy intensity. Some of these factors should be examined more closely:

1. The transition from primarily extensive to primarily intensive expansion of reproduction, i.e. the transition to intensification of the national economy as required by the SED [6, p 35] in which "the expansion of production and reproduction will be supported by increasing social labor productivity and by the effectiveness of social production" [7, p 42]. This process of intensification is occurring in the area of energy management itself just as in all other areas. However energy management at the same time also creates certain conditions for intensification in other areas, primarily through the demand-oriented provision of energy sources. Of particular significance with regard to the trend in commercial energy intensity is the initiative which calls for cost-saving use of energy and materials made through the use of energy which began with the transition to primarily intensive expansion of reproduction. Supported by a broad-based popular movement for the rational use of energy, this has resulted in considerable pressure being put on the reduction of commercial energy intensity.

2. Acceleration of scientific and technical advancements as a primary requirement for the intensification process is being directed more and more toward the development of processes and products with low specific energy consumption. Examples of this direction are microelectronics and the gradual removal from service of the incandescent lamp. Of course, only broad practical implementation of these research results is effective in terms of energy management. In the case of consumer goods in particular, the transition to new energy-saving generations of products with simultaneous discontinuation of older ones is proceeding at a slow pace. Among other things, this is due to insufficient economic stimulation. It must also be considered, of course, that the scrapping of old but operational washing machines, refrigerators, motor vehicles, etc. represents a certain amount of wasted energy--energy which has already been used in the manufacture of products. Optimization is called for.

3. Increasing the industrial cost of energy sources, brought about to a significant extent by a worsening of the natural conditions for extraction of coal,

natural gas, crude oil, etc., also acts to reduce the trend of commercial energy intensity. This cost pressure acts on the requirement for energy in several phases:

- In the first phase, the most expensive energy sources are replaced by less expensive ones; brown coal, for example, is substituted for heating oil in the same plant. Such substitution is often coupled with increased energy losses.

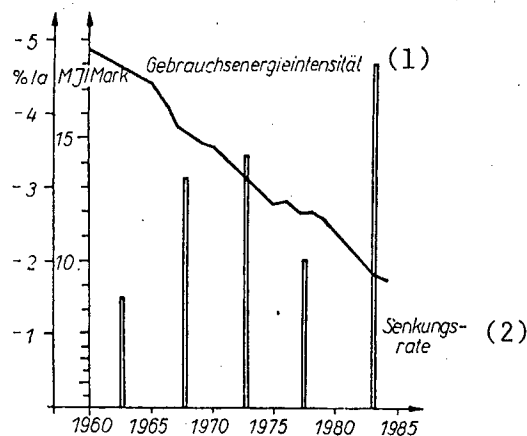


Fig. 3. Trends in the commercial energy intensity of the national income and trends in the average rates of decrease in the commercial energy intensity from 1960 to 1984

Key:

1. Commercial energy intensity
2. Rate of decrease

- In the second phase, new technologies and mechanical labor, in addition to a limited amount of manual labor, are used to reduce the energy required--as a reaction to increased energy costs--by the process in question.
- Finally, a determination must be made at the national economic level to see whether certain processes should even be continued, and to see how those particularly energy-intensive processes and products can be minimized in favor of less energy-intensive ones. Experience has shown that there are practical limits to such possibilities in the GDR, particularly because other factors in addition to energy management aspects play a role in decisions regarding the structure of the national economy.

The second phase of possible reactions to cost increases, i.e. the use of science and technology--and the practical application of same--is thus the most significant method of reducing specific energy consumption.

The fact that cost increases for energy sources reduce energy consumption, and thereby meet the requirements of national economic intensification, by no means indicates that simply increasing costs, including cases in which we in our own country have the means to influence them, is an effective answer in terms of the national economy. Energy cost increases which cannot be justified in terms of the national economy lead to wasted labor and thus to wasted



energy used in the manufacture of products due to the reactionary measures taken to compensate for energy cost increases.

4. A long-term trend toward increasing the percentage of non-material consumer goods such as information, culture, education, etc. can be seen at the present time. Most of these goods can be produced by processes with a low energy requirement. This change in the consumer goods structure goes hand in hand with the visible trend toward saturation in the areas of heating, clothing, food and mobility which is supported by more or less stagnant population growth in the GDR. In addition to directly affecting the amount of energy required by the population, this trend also has an effect on the overall national economy. It should be noted that the conclusion of the large-scale sociopolitical program for solving the housing problem should have favorable consequences in terms of energy for the construction materials industry, for example.

5. The continued disproportionate growth of nuclear power plant capacity in the GDR makes it possible to rapidly increase the amount of electrical energy produced with respect to commercial energy. This, in turn, enables the use of modern energy-consuming technologies with low specific percentage of commercial energy, in addition to the possibility of reducing social expenditures as a whole and protecting the environment. If one considers the extremely high percentage of solid fuels used at the present time in the production of commercial energy in the GDR (around 38%) in comparison with other industrialized nations, the potential possibilities for suitable substitution of energy sources are apparent.

6. The success in recent years in significantly reducing commercial energy intensity was able to be achieved to a great extent because the considerable "potential for energy waste" was reduced to a certain extent without excessively affecting our society. Although it cannot be assumed that there will be no more wasteful use of energy in the future--such waste automatically exists in an atmosphere of carelessness and apathy--there will be ways to achieve energy savings as a result of reduction of energy waste.

In the 1990s most processes which consume high amounts of energy, and which today are characterized by a low degree of effectiveness with regard to energy consumption, will either be subject to ground-up rationalization or will be shut down entirely. In general, new processes will be characterized by relatively high energy efficiency, although these new processes will initially require a relatively high degree of social commitment. As the actual energy use efficiency, defined as the quotient of commercial energy and useful energy, continues to approach the maximum physical limit, the technically feasible potential for savings will be relatively reduced. An even greater reduction will be seen in the economically-justifiable potential for savings. This, in turn, will lead to a slow-down in the reduction of commercial energy intensity.

7. The need to make increasing use of lower-quality raw materials, such as ores with a low metal content, will also lead to an increase in the required amount of commercial energy. This trend must be counteracted on the one hand by the development of new energy-saving technologies, and on the other hand by the expanded use of secondary raw materials.

8. The continued increase in the number of modern heating systems in private homes, necessary above all for sociopolitical reasons, is bound to have a significant effect on the energy requirement trend. The replacement of individual solid-fuel space heaters primarily by district heating systems, but also to a certain extent by gas and electrical energy, will not only change the structure of commercial energy sources, but will also lead to an increase in the amount of energy required due to the increased heating comfort potential. This potential increase must be offset by increasing use of thermal insulation in the buildings, with such use optimized in the interest of the national economy.

Over the very long term, we must expect the gradual appearance of new needs among our citizens, although it is impossible today to quantify such needs in terms of the energy they will require. Such complex needs could take the form of food production, environmental protection, space technology and health-related activities.

The trends discussed here, of course, cannot provide specific data on the actual trend in commercial energy intensity. However it is important nevertheless to recognize the clear trend toward its further reduction. Analyses to date certainly do show that the commercial energy requirement in the next decades will increase much more slowly than it did in the past two and one half decades. Within the scope of short- and medium-term planning covering the next 15 to 20 years, the trend in commercial energy intensity can be planned on the basis of detailed technical and economic analyses. As the planning period increases, however, planning becomes much more difficult because less and less information is available concerning the need for specific products, because further technical development of processes which use energy cannot be adequately forecast, and finally because planning activities must make allowance for basic innovations whose energy management consequences cannot be forecast at all.

#### Overall Energy Conversion Efficiency

Overall energy conversion efficiency is defined as the quotient of commercial energy and primary energy consumption as energy in the country. Fig. 4 shows the past trend of overall energy conversion efficiency. In some process groups (steam and hot water generation, gas production and the like), a positive efficiency trend can be forecast, even though no spectacular step-function increases are projected. An exception to this trend is electrical energy generation in condensation power plants. The transition from coal-fired power plants to nuclear power plants with water-water reactors brings with it a reduction in efficiency due to physical parameters. This trend will not turn around until fast reactors and/or high-temperature reactors are introduced.

Overall efficiency is particularly affected by the relative percentage of individual conversion processes. Here, the primary influencing factor is the generation of electrical energy--the process with the lowest conversion efficiency. The drop in overall efficiency in the 1970s which was caused by this type of energy conversion was compensated only by rapidly increasing use of extremely efficient natural gas (with an efficiency of 100% in direct use) and

crude oil. Because the use of these sources of energy should decrease in relative terms in the future, we will have to absorb a continuous drop in overall efficiency. The extent to which overall energy conversion efficiency depends upon a group of specific parameters is shown by the following equation:

$$\eta_{EU} = \frac{w \times k}{e(k - w) + w}$$

An analysis shows that the average efficiency  $k$  of all energy conversion processes, with the exception of the generation of electrical energy, has changed only slightly over the past several years. A constant of  $k = 0.74$  will therefore be used in the first approximate equation for forecasting overall energy conversion efficiency. In view of the expected drop and subsequent rise, a constant efficiency value of  $w = 0.28$  should also be used for the generation of electrical energy. It is further assumed that electrical energy expressed as a percentage of commercial energy will rise roughly linearly in the future as it has done in the past. This trend will certainly continue for the next five decades, firstly because nuclear energy will be responsible for all primary energy growth only after the year 2000,

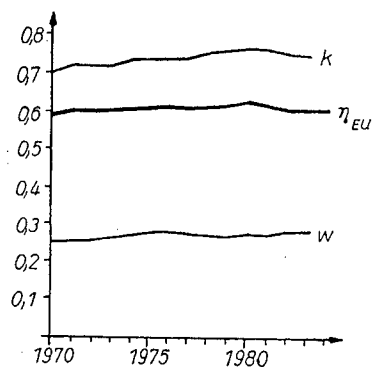


Fig. 4. Trends in global energy conversion efficiency  $\eta_{EU}$ , electrical energy generation efficiency  $w$  and efficiency of all other conversion processes  $k$  from 1970 to 1984

and will be used primarily for conversion to electrical energy, and secondly because nuclear energy is the only major primary energy source in the GDR whose use is not tied by nature to increased social expense, such as is the case with respect to fossil energy sources whose conditions of extraction are continually deteriorating. Thus, an energy conversion efficiency of  $e = 0.25$  to  $0.30$  can be forecast for the year 2030. Fig. 5 shows the trend in overall energy conversion efficiency, given the above-mentioned assumptions.

On this unfavorable trend in terms of energy, two process directions are superimposed which are extremely significant within the scope of the process of intensification of the national economy: upgrading and the use of secondary energy.

The /upgrading/ [in italics] of raw energy means the production of sources of energy with a higher energy density (such as electrical energy and briquettes) or special commercial properties (district heating).

The first objective in upgrading raw sources of energy in the GDR is to produce commercial sources of energy with identical properties even though the quality of primary energy sources is decreasing as the result, for example, of the decreasing calorific value of brown coal or the replacement of imported sources of energy. The second objective of the upgrading process is to continuously increase that percentage of commercial energy which is accounted for by highly-refined sources of energy, e.g. electrical energy.

The upgrading of raw energy, regardless of the context in which it is discussed, leads in all cases to an increase in conversion losses and to a reduction in the overall energy conversion efficiency. These losses are compensated by increased efficiency in energy use which is made possible by the upgraded energy sources. Purely in terms of energy, the limits imposed on the degree of upgrading can be seen: Upgrading should initially be limited to that point at which the sum of losses due to conversion and use does not increase, as referred to the use of primary energy. In reality, limits are only of significance when viewed within the framework of the economy, as under certain circumstances even increased losses can be beneficial to the national economy!

Coal liquefaction, i.e the conversion of raw brown coal into diesel fuel or gasoline for carburetor engines, presents an example of possible limits in the upgrading process. In contrast to crude oil processing including hydrocracking, a considerable reduction in efficiency must be expected--at least 12 kg of brown coal are needed to produce 1 kg of fuel, at least until it is possible to use nuclear energy in the conversion process. The investment costs are also considerably higher due to the greater masses involved.

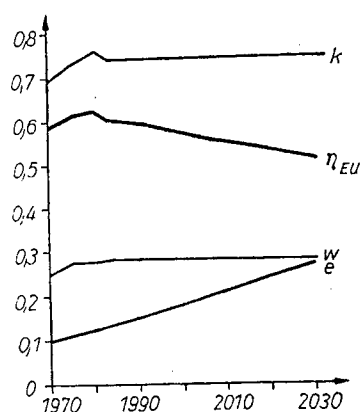


Fig. 5. Trend in overall energy conversion efficiency  $\eta_{EU}$  from 1970 to 2030

If the crude oil needed for conversion into lighter fuel is not available for any reason, alternatives to the lighter fuel should be sought, not just crude oil alternatives. In principle, such alternatives could include electrical energy or hydrogen. In the first case suitable batteries must be developed,

and in the second case effective methods must be developed for producing hydrogen and storing it in vehicles. Even if the cost of crude oil increases to the point that it would compensate for the expensive processes of coal liquefaction, research into alternative fuels is of economic importance, because such research could lead firstly to solutions at lower social expense, and secondly to processes based on the only unlimited source of primary energy--nuclear energy.

In contrast to the upgrading processes, the /use of secondary energy/ [in italics] has a positive effect on overall energy conversion efficiency. The use of secondary energy means the recycling of energy which still contains exergy and was lost through the conversion process and through the use of primary energy itself (Fig. 6). The exergy contained in these losses is largely transformed into energy, and is then no longer available for further use. To this extent, the use of secondary energy is distinctly different from material recycling, in which case iron, for example, could in theory be re-used an infinite number of times.

The available supply of secondary energy is therefore technically limited. An economic limitation results from a comparison of the expense involved in the use of secondary energy, which in general contains a very high energy component, with the expense involved in the use of conventional sources of energy for the same purpose. The reduction of losses through the re-use of energy has as an end result an increase in the amount of available commercial energy, regardless of whether the secondary energy is used in the conversion process for the production of primary energy--such as the use of blast furnace gas for the generation of electrical energy--or used directly, e.g. the use of waste heat from industrial furnaces in district heating systems. In the equation for overall efficiency, the numerator is thus increased while the denominator remains constant.

Around 250 PJ of secondary energy was re-used in the GDR in 1983, while the maximum economic and technical potential availability of secondary energy is seen today as around 333 PJ--a dynamic variable in view of scientific and technical development. Losses during energy conversion amounted to approximately 1440 PJ in 1983. If as in the case of energy conversion an average efficiency of 60% is considered in the use of energy resulting in energy losses of 800 PJ, roughly 11% of total energy losses are currently being used as secondary energy.

The fact that overall energy conversion efficiency will experience a downturn as the use of primary energy increases should not be interpreted as meaning that the available supply of secondary energy will grow in the next several years. Secondary energy use means using energy potential previously considered as lost or "wasted" energy. If such use in a conversion system is brought about and represents the current state of the art in technology, secondary energy is promoted to the position of an energy coupling product such as district heat produced by a combined heating and power station.

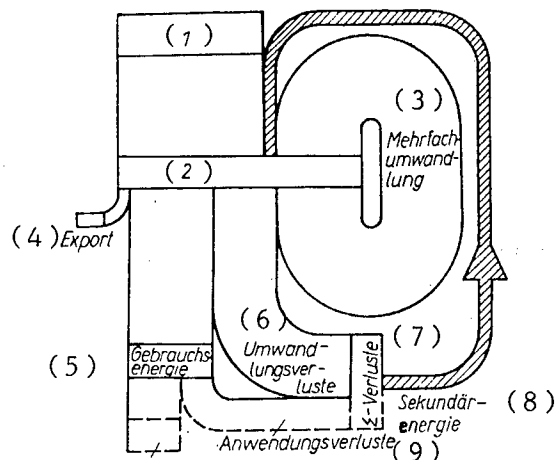


Fig. 6. Diagram of energy flow

Key:

- |   |                      |
|---|----------------------|
| 1. Primary energy consumption in the country -- energetic   |                      |
| 2. Sum of natural and synthetic energy sources<br>(The designation of the box at the lower left should read "useful energy".) |                      |
| 3. Multiple conversion  | 6. Conversion losses |
| 4. Exports  | 7. Sum of losses     |
| 5. Commercial energy  | 8. Secondary energy  |
|   | 9. Losses during use |

In energy conversion plants the situation is more difficult: Here secondary energy which is generated and used in the same plant, e.g. for preheating the air in industrial furnaces, can also be designated secondary energy only until this process reaches the level of the current state of the art in technology. Thereafter--and this is the case in the majority of cases--such energy will no longer be called "secondary". "Use of secondary energy" as a means of reducing specific energy consumption has here contributed to the reduction in commercial energy intensity. In those cases, however, in which secondary energy generated by energy-consuming plants is used externally (blast furnace gas, district heat), such energy will continue to be called secondary if one does not want to explain the energy-consuming plant, e.g. the blast furnace, as an energy conversion plant with blast furnace gas and pig iron as the coupling products.

The reduction in the flow of energy loss by the use of secondary energy, by the production of coupling energy and through the complete prevention of its occurrence is a great challenge for scientists, engineers and economists. A perpetual motion machine of the first or second kind will not be discovered, however there is still great energy potential to be developed in this area. The extraction of heat from the water/steam circuit, the cooling circuit and the flow of flue gas in power plants or the process developed in the IfE/ZRE for fluidized-bed drying of coal with subsequent use of the heat of condensation of the dryer vapors are two examples. It must be emphasized that necessary research in the field of secondary energy must not only concern the extraction of secondary energy from the primary-energy process, but must also

be coupled with studies regarding its use. This is necessary primarily due to its high energy content which, for example, permits its transport only over short distances. The large-scale extraction of low-temperature heat from a power plant, for instance, can be seriously considered only if there exists a corresponding requirement for such heat within a radius of several dozen kilometers of the power plant. In this case, optimum use of secondary energy must be considered as early as the power plant site planning phase.

Intensified use of secondary energy, e.g. reduction of energy losses, will doubtless have an effect on the growth rate of primary energy consumption. However the conclusion should not be drawn that use of secondary energy is a way of avoiding the need for primary energy growth. That cannot be expected because on the one hand the useable secondary energy potential is severely limited, and on the other hand because its use requires that energy be expended, primarily in the form of electrical energy for transporting generated heat or for increasing its temperature level through the addition of exergy by means of heat pumps. Without the increased generation of electrical energy, i.e. without expending primary energy, the degree of secondary energy use cannot be increased.

#### Percentage of Primary Energy Used in the Manufacture of Goods

That percentage of primary energy which is used in the manufacture of products in-country  $\sigma$  is relatively low due to the conditions in the GDR. In the past it has always been below 0.07, although it is increasing. This study cannot forecast development within the chemical industry in the GDR. For this reason a constant value for  $\sigma$  of 0.062 (as of 1983) will be used.

#### National Income

In addition to commercial energy intensity, overall energy conversion efficiency and that percentage of primary energy used in the manufacture of goods, primary energy consumption is also determined by the level of national income produced in the country. The following estimated figures are based on an average rate of increase in the national income of 4.5% per annum. This corresponds roughly to the average of all the years since 1960, and will be used as a guideline figure for the coming five-year plan.

#### Primary Energy Development

In order to define the limits within which the consumption of primary energy might develop during the coming decades, two conceivable extreme cases for commercial energy intensity and overall energy conversion efficiency--while making allowances for the level of the national income and the projected percentage of primary energy used in the manufacture of goods--are assumed.

A rate of decrease of 3.26% per annum which corresponds to the average value for the years since 1970 (variant 1), and a rate of decrease of 4.68% which is the high average attained over the past five years (variant 2) will both be assumed for commercial energy intensity (Fig. 7).

A value in accordance with the trend shown in Fig. 5, i.e. 0.514 in the year 2030, as well as a trend which lies in the middle between present efficiency and the pessimistic curve in accordance with Fig. 5, will both be assumed for overall energy conversion efficiency.

These assumptions yield in-country primary energy consumption trends as shown in Fig. 8. It should be noted that the effect of the commercial energy intensity trend on the primary energy development will be considerably greater than the effect of overall energy conversion efficiency: During the next 50 years, a decrease in commercial energy intensity of 80 to 90% can be expected, however overall efficiency is expected to decline by less than 20%. This difference emphasizes the necessity of concentrating energy rationalization initiatives on energy use in the future as well.

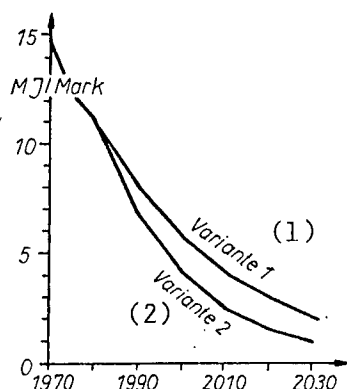


Fig. 7. Commercial energy trends from 1970 to 2030

Key:

1. Variant 1

2. Variant 2

The figures given above lead to relatively highly divergent trends in primary energy consumption: on the one hand to a slight drop in comparison with 1980, and on the other hand to an increase at an average rate of almost 1.5% per annum. The assessment of both trends is only possible in conjunction with an assessment of the trend in the energy source structure.

- the near /stagnation of primary energy/ [in italics] (variant 2) presumes considerable effort to reduce specific commercial energy consumption and to improve the efficiencies of the individual energy conversion processes. A trend of this kind requires considerable changes in the energy structure, in particular a large increase in that percentage of commercial energy available in the form of electrical energy, with simultaneous improvement in power plant efficiency. The coupling of heat and power in large part makes possible the latter. Growth in electrical energy generation with stagnant use of primary energy requires a corresponding reduction in the use of other sources of energy. For economic reasons, these other sources of energy should be the imported crude oil and natural gas; however it is precisely these two sources of energy which generate low conversion losses and guarantee low specific consumption when they are used. The other possibility would be a reduction in the use of solid fuels as energy--primarily brown coal briquettes--and the use of the brown coal liberated from this application for the additional generation of electrical energy. And finally there



is also the possibility of generating the additional electrical energy in nuclear power plants, thereby obviating the use of corresponding quantities of brown coal.

- The /progressive development of primary energy/ [in italics] (variant 1) is sensible as long as the expense of lowering commercial energy intensity is greater than the provision of additional sources of energy. More detailed technical and economic studies, especially in the field of energy application, must be made in order to justify decisions made with regard to the national economy. With regard to conditions in the GDR, brown coal and nuclear power, and also crude oil and natural gas, continue to be available in order to meet the growing demand for primary energy. The potential applications for sources of energy which can be regenerated should remain highly limited for technical and economic reasons even after the year 2000, and should only be of regional significance. Because only decreasing or stagnant crude oil and natural gas supplies are projected, the extent to which nuclear power is used as a source of energy depends on the trend in brown coal extraction. Long-term planning of the brown coal extraction curve is thus not only of great significance for the brown coal industry and the cooperative geological and heavy machinery construction fields, but also for the construction of nuclear power plants. For geological, economic and ecological reasons, the annual extracted quantities of brown coal are expected to increase up to roughly the beginning of the next millenium, followed by a phase of stagnation, and finally by a decline. The shape which the down side of this curve will take will be determined to a considerable extent by the fact that brown coal is the only major carboniferous material available to us over the long term.

Calculated estimates show that a 1.5% annual increase in primary energy requires the construction of nuclear power plants to supply an additional capacity of approximately 2 GW per annum. A comparison of this figure with the figures achieved in the past indicates the considerable effort required for implementing such development, and even shows the limits imposed on such extensive development of primary energy.

In summary it can be seen that the trend in future energy management in the GDR will continue between the two extremes of "extreme reduction of commercial energy intensity" and "rapid development of nuclear energy potential". This will not be an "either or" proposition, however it can be expected that the emphasis on rational energy use and the development of nuclear energy will oscillate within the limits shown in Fig. 8 depending upon the current phases of development. Thus the current phase of relatively high rates of reduction in commercial energy intensity, which has continued since the end of the 1970s, will come to an end once the solutions for rationalization recognizable today have been largely implemented and a relatively high level of rational energy use has been achieved, as measured against the world as a whole. A characteristic example of the achievement of a high level of energy management will be the approaching end of the electrification of the railroads. Beginning perhaps in the second half of the 1990s, a new phase of greater primary energy growth would then follow. This development would be initiated by a generally high level of social commitment to the saving of energy in energy-consuming plants, most of which would then exhibit a high degree of modernization, which would then provide economic justification for high growth in the

field of energy production. New scientific and technical findings and basic changes in the structure of the national economy will again bring this phase to a conclusion.

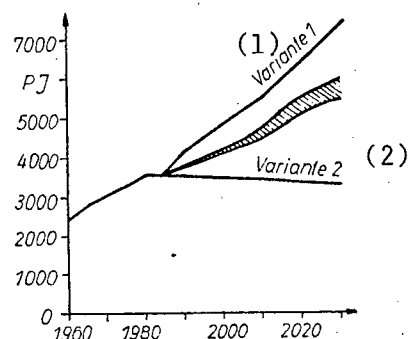


Fig. 8. Primary energy consumption in the GDR from 1960 to 2030

Key:

1. Variant 1

2. Variant 2

The selection of a strategy in each case will be based largely on economic criteria. The difficulties arising in conjunction with the calculations involved in selecting a strategy can only be touched on here. Thorough optimization of overall energy management, from primary energy generation to energy consumption, is certainly only possible through iteration. This could be done if a basic structure is used as the starting point for deciding whether the inclusion of new technologies for energy use and conversion, and thus the incorporation of selected changes in the magnitude and structure of primary and commercial energy, lead to greater or lesser economic expense. The corresponding variant must then be chosen for each concrete case.

In addition to the economy, however, the protection of the environment has come to play a decisive role in long-term energy management. This will continue to be correct as long as environmental protection requirements have not yet been fully quantified and adequately evaluated in economic terms. The thesis that sparing use of energy is the best environmental protection measure still holds true, because each kilowatt-hour of electrical energy saved means that around 1.25 kg of brown coal need not be extracted and burned, thereby reducing the effect on the land as well as the emission of pollutants into the atmosphere.

This thesis is beginning to lose some of its validity as nuclear energy slowly begins to become more and more significant, particularly the future use of nuclear fusion, because the generation of energy through nuclear power leads to only relatively insignificant pollutant emissions which can be fully dealt with by current technology. At first glance, it would seem that ecological criteria would be increasingly pushed into the background in the case of nuclear power. However it should by no means be concluded that the production of energy worldwide can be allowed to proliferate without limit. Aside from the effect on the land, the conversion and use of energy is always associated with the emission of heat which--over the very long term--would lead to "thermal environmental pollution." It is possible that worldwide expansion of

energy generation will be limited not by the availability of primary energy reserves, but by gradual changes in the climate brought about by the heating of the atmosphere and the hydrosphere.

The purpose of forecasts has always been to provide us with information which we can use to determine our behavior in the present and near future. An attempt to do this should be undertaken on the basis of the information presented above. One further fact should be noted in particular: In spite of expected fluctuations, we will in the future continue to have to make allowance for relatively low energy management growth rates--at least lower than the average rates over the last several decades. Detailed studies have indicated that these rates will average below 1% per annum up until the year 2000. For the socialist energy manager, this is not a question of prestige; the determining factor in the effectiveness of energy management is not its volume, but its ability to satisfy energy demands with a minimum of social expense. Long-term energy management planning must show us the best ways to accomplish this goal.

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ECONOMY

GERMAN DEMOCRATIC REPUBLIC

CENTRAL INSTITUTE COORDINATES ECONOMIC RESEARCH EFFORT

East Berlin SPEKTRUM in German Vol 16 No 10, Oct 85 pp 22-25

[Interview with Prof Dr rer oec habil Wolfgang Heinrichs, born Gdansk (then Danzig) 1929, member GDR Academy of Sciences, director of Central Institute for Economics. Confession: If he had not become a scholar, he could "certainly have chosen to be an opera singer, baritone." A war injury ended that dream when he was almost killed in Hitler's last rally. His father, active SPD member and antifascist resistance fighter, early on taught him the practical aspects of the class struggle; thanks to the postwar educational reforms, the theory was later presented by the new democratic Germany. 1951-1959 studied the bases of Marxism-Leninism at the sociological faculty of Rostock University. Establishment and management of an institute at the College for Domestic Commerce, successful doctoral thesis, at 27 appointment as professor. 1963-1969 deputy to the GDR Minister for Trade and Supply. Subsequently founder director of the College for Trade at Leipzig. From 1973 manager of the Central Institute for Economics at the Academy of Sciences. 1976 elected member of the Academy. The Central Institute was established in 1954, on the recommendation of the Seventh SED CC Plenum. The first concept encompassed the most important sectors of economics and had a relatively broad profile. Academician Fred Oelssner assumed the management of the institute in 1958 and directed it toward basic politico-economic affairs: The political economics of socialism, the history of political economics and the debate with bourgeois economic theory. The Eighth SED Congress stimulated orientation to reproduction-theoretical research. The first paragraph is SPEKTRUM introduction.]

[Text] Project related cooperation between natural, engineering and social scientists is unimaginable without the contribution of the economists, indeed that contribution is needed more than ever. Key technologies stand and fall with their economic efficiency. Yet, anyone wishing therefore to transform our economists into "chief bookkeepers" is bound to be unpopular with them.

SPEKTRUM: Economics covers a great deal of ground. What are the considerations governing an academy institute like yours for fixing its research lines or occasionally altering them?

Heinrichs: For more than 10 years we have been concerned with the laws of the evolution of intensively expanded socialist reproduction. We see our

studies of the conditions, interrelations, effective factors and contradictions of intensively expanded socialist reproduction as an essential and unmistakable part of the theoretical efforts of sociologists with regard to the developed socialist society. Of course we are also taking into account the results achieved by our colleagues in other socialist countries, in particular the USSR. At the same time, the domestic and external conditions and effective factors confronting us in the GDR are inevitably at the forefront.

In all modesty (needed for every self-assessment of scholarly results), I may claim that our institute did provide a contribution to the theoretical work of our party relative to the drafting of the social strategy, in particular the economic strategy, doing so within the great collective of GDR economists who are associated in the council for economic research at the Academy of Sciences.

As you are aware, the theoretical basis of this strategy is the Marxist-Leninist doctrine of reproduction. This also provides the framework for the long-term evolution of the social efficacy of our future research. At the same time we are seeking opportunities for increasing our contribution. These efforts are accompanied by the greater emphasis of some of our institute's potential on the study of the politico-economic foundations of the preservation of peace, the differentiated dispute with modern varieties of bourgeois economic thought, editorial work and, last not least, the history of the political economics of socialism.

SPEKTRUM: Our first question is not fortuitous, because--as they say--life constantly confronts us with new problems, not least as the result on scientific discoveries. The resolutions adopted by the Tenth SED CC Plenum are quite decisive for the present segment of our development. Indubitably they also affect research at the academy, because they compel us to seriously reflect on the problem how to noticeably raise the efficiency of basic research--specially coupled with the reproduction process. How does your institute tackle the creative process of the absorption and subsequent implementation of these far reaching resolutions?

Heinrichs: The past weeks were characterized by strenuous conceptual work on the plan of sociological research for the years 1986-1990. Quite definitely, the substantive processing of the resolutions adopted at the Tenth Plenum and their translation into solid scientific problem definitions have a central role in the ongoing preparations for the Eleventh SED Congress--the elections for the management bodies of our institute's party organization are an important stage therein. Building on earlier CC plenums, the Tenth Plenum generalized the experiences collected in the implementation of the economic strategy in years past. It drew far-reaching conclusions, and these will keep us busy well beyond the plan period through 1990. The call for the greater efficiency of basic research at our academy is surely a conclusion reached from the fact that the GDR has entered a new stage of the implementation of our economic strategy, the stage of comprehensive intensification. I mean to say that, so interpreted, the Tenth Plenum resolutions do not touch on marginal problems but indeed on key questions of our research and actually

need to vitally affect our conceptual work. Comprehensive intensification, interpreted as a new stage in our national economy's gearing to intensively expanded socialist reproduction, is dependent on the economic utilization of scientific-technological innovations to a far greater extent than earlier stages of intensification. Involved are such innovations as are rooted in the results of basic research, create qualitatively new productivity and efficiency potentials due to new operational principles or a new combination of known operational principles and make them available to the national economy. Still, scientific-technological innovations are not per se a productive force, let alone "automatically" effective in the economic circulation. For that they need to be applied in management.

Moreover, the establishment and development of combines in past years created new conditions (opportunities) for the closer interaction of science and production on the basis of economic criteria, expressed in price, profit, net production, credit, and so on. This includes such issues as that of the concrete "handling" of the primacy of economics vis-a-vis scientific-technical innovations and the classification of the results of basic research in this network of relations between economics and engineering. It is my considered opinion that it is imperative to elucidate these basic interrelations which are more and more relevant to the deepening of the long-term foundations of comprehensive intensification if we wish to even more effectively combine the benefits of socialism with the achievements of the scientific-technical revolution in these new conditions. As you can imagine, this is linked not only with the encouragement of new "thought orientations" but also with decisions on the reconstitution of specific research collectives.

This is just one example of our efforts to translate the Tenth Plenum resolutions into sound scientific problem setting. Also remember Erich Honecker's statement at the same plenum, according to which the principal task in its unity of economic and social policy will accompany us beyond the threshold of the second millenium. This view of the future is particularly important for us sociologists because it is not concerned merely with more and better consumer goods, more and better housing--incidentally, the housing question as a social problem will be settled by 1990--, more and better social services in the most varied spheres. They are all "hypostases" of social relations that we need to further develop as the totality of social relations with the successful continued pursuit of the policy of the principal task. Here, following Marxist methodology, the organization of socialist production has a central role.

This is how we understand our conceptual work. It is a most important section of our research efforts. I have learned from experience that the success of our studies largely depends on it, because it involves the identification of each staff member with his task and the creation of the necessary creative atmosphere.

SPEKTRUM: To whom do you address the concrete results of your research?

Heinrichs: Since the profile of our research efforts emphasizes economics, the results of our work are mainly addressed to central government organs, in

particular to various sections and departments of the State Planning Commission. Its representatives attend every important preliminary and concluding defense of projects and assess us from the practical standpoint. At the same time our institute also handles a kind of contract research, for example projects relating to intensification conceptions in various combines. When our partners asked us to speed up this work, we came to more acutely appreciate its importance. The result is a trustful atmosphere with better feedback.

Looking to the Tenth Plenum, our institute will have to discover more kinds of efficient cooperation with the combines. We already have some practical experience with regard to cadre exchanges. Still, our range needs to be expanded. Our most important decisionmaking aids are contributions to the scientific justification of the economic strategy and its ongoing successful realization--not only for the Planning Commission but also for other government organs, the party and the party congress. We are working on this jointly with other economic research institutes. These decisionmaking aids may be represented by a documentation, a study, analyses and specific recommendations. Talking of the addressees of our research results, we should certainly not omit mention of our great contribution to continuing education and training as well as propaganda work, both in oral and written form and more and more involving the inclusion of the mass media. We consider this a significant pillar of the social efficacy of our work. It has a high multiplier effect--if you like the "intellectual renewal" of the main productive force.

SPEKTRUM: Let us stay a little with the often sensitive point of implementation. After all, however challenging and costly the mental effort involved, it cannot do everything by itself. That which motivates a scientist must be followed by that which he motivates. And that does not happen without some dispute. Do you see matters this way, too?

Heinrichs: Indeed. Our partners often set different accents when evaluating part or the total results of our work. That is an advantage rather than a defect in our cooperation. They are concerned with obtaining more concrete details of implementation, and their interest in scientific statements on the timely adoption of longer range measures is secondary. That is why they sometimes tell us that our submissions relating to the concrete terms on the feasibility of recommendations are not enough for decisionmaking. If we were always to respond to such demands, we might easily be tempted into undue emphasis on practical matters. The only means to resist this is a good knowledge of industrial practice, if at all possible from one's own experience. In that case one has the backbone necessary not to assume tasks (usually they involve concrete decisionmaking preparations), which are in fact up to government and economy managing organs. I am trying very hard to pass on these experiences to our younger fellow scientists, not least by persuading them of the usefulness of at least 2-3 years of practical work.

SPEKTRUM: As Professor Hager once put it, the Academy has the almost unique advantage of uniting nearly all scientific disciplines under its roof. How does your institute utilize this advantage?

Heinrichs: Due to the specific nature of its subject matter, economics carry the main part of the cooperation between sociologists on the one hand and natural scientists and engineers on the other. In retrospect I must say that the energy and raw materials discussion in our institute was actually initiated by the natural scientists. In the meantime we have established a research group on this topic, employing 12 researchers. Of course our partners now and then fall prey to the temptation of trying to make us their "chief bookkeepers." When we collaborate in projects, we do that with generalization in mind, not in order to assume the tasks of others. Most fruitful in every case has been analytical-forecasting work as well as topics concerning the fitting of concrete projects and new technologies to society and the economy. On occasion the natural scientists tend to ask us some rather awkward questions, such as "how should we assess new energy sources? The Central Institute for Economics pointed out the importance of energy conservation at a very early time, and that did not at first sit well with some natural scientists who were just then working on the conception for new energy sources.

The national problem may be summarized quite simply: What is better for society? More investments for the development of new energy sources and the better utilization of existing sources, or more for research and investments relating to energy conservation? At the present time, the latter is more beneficial, but of course we need both. Current market events do not provide much evidence, because current prices have a large part in this connection (these latter, incidentally, change at certain intervals). In our debates with all kinds of collectives of natural scientists we have always pointed out the need for nationally beneficial energy conservation; in other words, we do not wish for conservation "at any price." The problem involved is this: Prices of energy and raw materials rose faster than prices of machines and plant and also faster than wages. In terms of the national economy, conservation is worth while in such circumstances even if energy conservation costs more than in former times. In physical or chemical terms, a ton of oil is exactly the same in 2000 as in 1970, in economic terms it may be "worth" five times more.

In the long term we intend to deepen our interdisciplinary work in three directions: In the field of nutrition, because this requires about half our available national resources and has a decisive role in the system of needs; the long-term demand for energy and raw materials, because substantial resources are earmarked for these sectors, and because here the main nationally important processes of further processing occur; and in the field of microelectronics and other key technologies, because these are to help us achieve the necessary productivity and free resources as well as being indispensable for making the intensification process truly comprehensive while, at the same time, providing it with long-term bases.

SPEKTRUM: You have used the terms money, price and credit. They inspire our question about the nature of commodity production in socialism, a question which was debated for years. Has that debate been concluded?



Heinrichs: By no means. All that has happened is that we do not debate in such abstract terms now, no longer in terms of yes or no but also in terms of "how." These reflections are incorporated in ongoing research relating to socialist assessment theory. Incidentally, they were and are being fertilized by our cooperation with natural scientists. Chemists, for example, rightly point out that the benefits of refined changes of substance cannot be assessed only by way of the work involved. They need to be determined also by the greater use value for society. Unfortunately, we cannot yet measure that quantitatively. However, if we do not take this higher use value for society into account, we might consider the results of natural science research to be useless just because the costs of the (refined) product do not decline, even when its use value rises. But how can we assess the effect of the satisfaction of new needs in marks and pfennigs? How do we take it into account in our planning and with regard to long-range scientific-technical conceptions? It is no longer enough to call for improved labor productivity and lower costs, and assessment by costs exclusively may even obstruct scientific-technological progress. If we succeed in settling these questions, we will also be better able to explain the nature of socialist commodity production.

It seems to me that the development of modern productive forces raises new questions for political economics, and these questions can no longer be answered by assumptions which may have been adequate for the extensive development trends in our national economy in former decades.

SPEKTRUM: Is it possible in your specialty to go in for "world standard comparisons"? What would be their specifics?

Heinrichs: Certainly, provided the terms are specific. Anything else would mean that we would measure ourselves by home made criteria, and that would inevitably lead to stagnation and the stunting of any creative atmosphere. As I said earlier, our contribution is the theoretical reflection of GDR experience, but we test our reproduction theoretical statements by the national and international echo, because political economics is an internationalist science, not a GDR or Soviet science.

Our highly fruitful cooperation within the Council for Economic Research as well as with the Soviet Academy institutes and those of other socialist countries informs us whether or not we have provided an important contribution. Joint publications are very important indeed. We also publish different opinions in order to let the reader be directly affected by various experiences. We may even conduct some comparisons with economics in capitalist countries. At international conferences, for example, delegates wait for our contributions relating to energy conservation, experiences with brown coal, the use of the input-output analysis and the conditions and causes of stable economic growth in the late 1970's and early 1980's. We must always start from the premise that our science represents an ideology, an element of Marxism-Leninism.

SPEKTRUM: A section of the Central Institute for Economics is engaged in the critical dispute with bourgeois economic theories. Let me be somewhat heretical: Is that still worth while in our day and age?

Heinrichs: Definitely, and that for four reasons: Bourgeois economics is also and always ideology. When we talk of its crisis, we may not disregard the fact that it does operate. Where we are not, the others are. Secondly, it is not correct to speak of bourgeois economics, because that involves a wide range of the most varied views which we need to evaluate in concrete terms. Thirdly, some of their economists tries to provide government decisionmaking aids. In so doing, they arrive (by way of analyses) at interesting notions and recommendations, for example with regard to various methods of encouraging scientific-technological advances or stimulating investments.

We must study such matters with a critical eye and consider in how far such tools may be more effective if transferred to the conditions of a socialized economy and socialist planning. Ultimately we conduct this debate also as part of our responsibility to our fraternal parties in the capitalist countries.

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ECONOMY

GERMAN DEMOCRATIC REPUBLIC

TRADE UNION FUNCTIONARIES INTERVIEWED ON KEY TECHNOLOGIES

East Berlin TRIBUENE in German 10, 11 Dec 85

[10 Dec 85 p 3]

[Interview with Reinhard Sommer, member FDGB executive board presidium, chairman of central executive board IG Metal; Winfried Ploetz, BGL chairman, ORSTA-Hydraulics VEB, Leipzig; Harald Funke, chairman of central BGL of parent plant "Herbert Warnke" Conversion Engineering Combine, Erfurt; Joerg Popek, chairman of central BGL of parent plant "Fritz Heckert" Machine Tool Construction Combine, Karl-Marx-Stadt; first two paragraphs are TRIBUENE introduction]

[Text] "Tomorrow's GDR is conceivable only as a country where modern key technologies are increasingly introduced and, on this basis, a significant and rapid growth of the productivity and efficiency of labor is achieved, where important innovations and top performances are generated." Harry Tisch, SED Politburo member, member of Council of State, chairman FDGB]

New technologies are in the forefront of attention. The use of microelectronics generates information and communication equipment which more and more dominates production. Consequently traditional work processes are changed, labor productivity enormously raised, manual work superseded, time gained for creative endeavors and fantasy encouraged. What, actually, is CAD/CAM all about? In today's and tomorrow's TRIBUENE, labor unionists describe their first experiences.

TRIBUENE: Key technologies do not just happen along. Who actually decides what is introduced when and where?

Ploetz: In our case it is the general director, on the basis of the plan. In fact, it cannot be otherwise. Of course he then appoints someone to assume the overall responsibility for tackling this process. In our combine that is the director for organization and data processing.

It is an essential feature for me as the BGL chairman to be one of the original members of the new study group and therefore well informed at all times on the one hand, and on the other hand able early on with the BGL to cooperate in the introduction of the new equipment. It is quite uncanny how quickly events have followed one another since the establishment of this study group.

Funke: Until recently, a key technology such as CAD/CAM used to be a matter for the experts, for interdisciplinary study groups at our combine. Though we have advanced quite a lot in the meantime, we are still stuck at the stage of isolated solutions. We will have to get away from that.

The new technologies are more and more important. After all, we are not concerned only with technical-economic solutions but also with their effects on people. State managers and the labor union here carry a joint responsibility. Together we are striving to find the appropriate leadership methods, to create the proper atmosphere for the mental preparation of our collectives and ascertain the requirements involved for labor union work.

Popek: The same goes for our combine: The general director decides when and what new equipment is to be introduced. Nevertheless, I would like to add some thoughts on this topic: Some people talk about new technologies like blind people about color. Not very persuasively. That is why we began to train our labor union officials immediately following the decision in principle. What is CAD/CAM, and what can it do? What is its meaning and purpose? Consequently they understood much better what was going to happen in their collective, and their information and direct influence were much enhanced, much more specific. The result was the emergence of correspondingly satisfactory competition obligations assumed by these labor union groups.

Sommer: The rate of acceptance of new equipment by the collectives largely depends on our ability to make its effects fully comprehensible to the working people, thus enabling them to appreciate the role, significance and place value of this particular item of scientific-technological progress. Of course the situation is different in each combine or factory, but something should be common to all: The discussion about these development trends must range across the entire reproduction process, beginning with the plan discussion via plan drafting to the actual plan realization. We must always remember that something not included in the plan cannot be easily done or included in the socialist competition.

In addition to the general enlightenment of all personnel regarding the demands, connections and consequences of key equipment, it is particularly important to rouse the enthusiasm of and train those who are directly affected. It is up to the general director to decide where this will happen, who will be affected and to what extent. But it is certainly desirable for the labor unions to submit their own proposals for the use of such technologies and the respective equipment, based possibly on analyses of the development of working and living conditions, accident prevention and so on. All this should be incorporated in the relevant plan parts.

TRIBUENE: How do those involved in key technologies find out what is going to happen?

Ploetz: Initially hardly anyone knew exactly what was ahead. Our obvious recourse was to ask the director for organization and data processing to meet

with us and describe in detail what the collective ought to expect, where and, above all, when and why. That enabled us to review and deploy our labor union resources and potentials. And of course that also meant fully discussing the topic with our fellow workers.

Now that we had the expertise, we sensed in the course of the discussions just where the difficulties were arising. Some people had the oddest ideas, others said "let us get the equipment, after that we'll see." No, we replied, we will have to do quite a lot before the equipment arrives here. We talked about the training required, about job organization and job security (meaning that full employment will of course continue to be guaranteed). Most workers were won over just by these confidential talks.

At next January's BGL conference, we will draw up a balance sheet to see what has been accomplished so far and to enable us to arrive at conclusions for supplementing our competition program. After all, following the party congress, the competition for the best possible introduction and most rapid utilization of the key equipment will continue at a higher standard, a faster rate and with new targets.

Funke: These were our conclusions also, when someone had the idea to use our intensification cabinet for informing our fellow workers. That cabinet has been in existence for a number of years. We have now expanded it to provide an information center for CAD/CAM. We have lately been inviting those for training at this center, who are gradually coming to handle the new equipment.

Still, such a center does not replace one-on-one talks. At 55, a worker wants to know what is going to happen to his job and, therefore, to him. Some of our top designers fear for their image, because recent university and technical college engineering graduates possess some knowledge that the older people are still lacking. That is why talks with the manager and the labor union official are very important to remove false impressions.

All-round information does more than safeguard mental preparation, including the readiness for retraining. It also strengthens confidence in our policy.

Sommer: The Eleventh SED CC Plenum and the Thirteenth Meeting of the FDGB federal executive council clearly demonstrated that the labor unions' contribution consists of more than spreading information about new developments or explaining causal connections. We must be quite specific. We need to prepare the soil for widespread cooperation in the collectives. To do this, we must arrive at personalized decisions. We have learned from experience that people who know what will happen to them and their jobs, will give up their wait-and-see attitudes and themselves become champions of planned changes. That is why we must quite early devote a good deal of attention to the following questions: What jobs will be affected? Who will work with the new equipment? What kind of wage payments will be used? What will be the effect of the introduction of key technologies on the other workers?

The status of labor unions in the FRG is very different indeed. In mid-September last, Saarland factory councils and union organizers made that

abundantly clear in their conversation with Erich Honecker, which I attended. In the course of 50 years, the share of the coal and iron industry in Saarland industry has shrunk from 60 percent to 30 percent. The metalworkers on the Saar, therefore, are faced with very different problems. They struggle for the preservation of jobs and the living of thousands of metalworkers and their families. The labor unions were most interested when we told them how and where generally the labor unions in the GDR help decide policy right from the start and are not simply confronted with the decisions made by others.

Popek: Who will work with the new equipment? That was our first question. For some the relationship with the new equipment is like love at first sight. However, others think that this kind of work is boring--all they have to do is push a few buttons, and that is not a satisfying occupation. That is by no means an arrogant attitude. We hear this kind of complaint mainly from fellow workers who had always been very creative and now fear that computers and video terminals will clip their wings. Are we able to offer them tempting job contents? Or will we have to find other jobs for them? These are the kinds of questions the labor union will have to consider so as to find the proper answers.

TRIBUENE: Once it is obvious who will be needed--how is he going to be prepared for the challenges of new key technologies?

Ploetz: Our training plan operates at three levels. It combines the various opportunities for gaining the necessary knowledge by different approaches. These approaches include graduation from the Karl-Marx University, a 1-week course of instruction at the Robotron VEB, lectures at the Woerlitz Combine Academy.

We discussed this plan in the BGL, because here too it is imperative to persuade rather than command. In only two cases did managers disregard this imperative, and problems promptly arose. In one case, training is still held up by a housing problem. We are going to help him obtain an apartment in Leipzig.

Sommer: When you deal with people, nothing is automatic. Once fellow workers have agreed to additional training, we must make sure that it is relevant to the job or objective. If not, uncertainties arise upon employment, and they may lead to errors. Moreover, the standard of knowledge differs among different people. A secondary school graduate's prior knowledge is greater than that of a person who only finished 10 grades. Continuing education courses, though, often assume the same standard of education. Consequently, some people are not challenged enough, while others are led to doubt their capacities and in the final result their self-confidence suffers.

The transition to key technologies offers an opportunity for further personality development to everybody. The factory can provide the proper conditions, but it is up to the individual to make the most of them. The labor unions should suggest agreements between the factory and the people in training, according to which workers who are profoundly committed and

therefore achieve the training objective at a faster rate will receive moral and material recognition.

Funke: That represents a great challenge to the intensive preparation of all who work on these problems. This includes an extensive training program just as much as the proper motivation. On the other hand, some engineers feel themselves to be laborers when they are supposed to work on software. They are therefore not keen on taking such a course. Though this depreciation is entirely unjustified, we should nevertheless think of possibilities for material and moral revaluation.

Popek: The spectrum of new requirements to be prepared for is exceptionally wide in our combine. It ranges from training on the job via the Operations Academy for future software engineers to postgraduate studies at the Karl-Marx-Stadt Technical College. We have some people who are most eager to use the training opportunities in the factory itself, though these courses of instructions take place outside working hours, sometimes at weekends and, on the computer, occasionally even at night.

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[Text] TRIBUENE: Once the computer does everything--will it replace the competition?

Ploetz: Certainly not. We are already working with a CAM process in our combine. The competition has become more concrete and more suitable for accounting. The competition has also been advanced because breakdowns are more quickly removed and more efforts made to ensure order and safety so that breakdowns are avoided if at all possible. CAD equipment also leads to changes in the targets and results of the designers, and that in turn makes the competition on these jobs more concrete and suitable for accounting also.

Funke: I think that the competition benefits from computers: Competition evaluation by means of the computer allows us to much faster than the former manual analysis influence the ongoing course of the competition. Computers also benefit the innovators who, due to the earlier availability of primary data, are able more quickly to realize their proposals and earn profits.

Popek: If a computer is operated by a human being--and that will certainly always be the case--, that human being must have a specific task which may be the object of a competition obligation. That may involve the better utilization of the computer or a computer controlled plant, uninterrupted operations or the faster tracing of a defect. What counts then is the technical and timewise availability of a plant.

No, computers do not make the competition superfluous. However, the composition of competition collectives is bound to change. Researchers, development engineers, technologists and production workers will have to move much more closely toward one another to jointly accomplish the plan and competition tasks with the help of new technologies. In this respect we are merely at the beginning. The traditional methods still predominate even in

the sections which already operate with key technologies: One collective--one competition program. Later these methods will change, just as traditional operational structures are changing. At the very least they will interact much more. What remains unchanged is the basic competition objective--to produce faster, better and cheaper.

TRIBUENE: Who supplies the necessary equipment for the key technologies?

Ploetz: We are not well equipped to construct it ourselves. The basic equipment is supplied by others. And yet it would be wrong to passively wait for it. What do we have to do to efficiently as at all possible operate the devices? What can we do to interlink them to the greatest possible benefit? How can we use our own rationalization aid construction for that purpose? These are just three questions which need to be answered in each factory--before the equipment for the new technology arrives.

This attitude paid off with regard to our automation project. Our own rationalization aid construction developed and constructed the microelectronic controls for linking the plant operating on the CAM principle. In 1986 we will do the same with the necessary hydraulic master cylinder which will considerably ease operations.

Popek: Much the same is happening in our combine. We needed new subassemblies for controls. They were developed in the research center at our combine, but we lacked the facilities for producing them. We therefore found an outside manufacturer. The collectives also present many ideas for exceeding the performance limits listed by the producers of the new equipment. Some of these ideas can be followed through by our own rationalization aid construction.

TRIBUENE: Are key technologies attractive for those who work with them?

Ploetz: They are initially attractive mainly for those staff members who come from the universities or technical colleges. But we also need those who have been working for many years at the work places that now need to be converted. To begin with, we talked to the best workers, removed them from their normal collectives and combined them in others. At the moment they are mainly young fellow workers whose enthusiasm for new developments is quickly aroused.

Funke: Actually all this proves our assumption: Work is always attractive when it promotes the personality, when it creates opportunities for showing one's mettle. The young are attracted thereby. As regards older workers, they are influenced by their appreciation of the necessity, and it is easier for them when the new conditions are appealing or created without delay.

Popek: Key technologies are definitely attractive, and according to our experiences for our young and older fellow workers. That is why we are mindful of the tried and tested mixture when making up the collectives for the new technology: The enthusiasm of the young and the experience of the older workers.



Sommer: It may be advisable for us to abandon the formula of putting the best workers in the new jobs. It would probably be better to say that the most capable people should be employed there. After all, we cannot be sure that the former best worker will remain so on the new job.

We must proceed with the utmost sensitivity, so that someone used to success should not be made to feel a failure. It is always imperative to persuade people rather than take them by surprise. Young people often have an easier time of adjusting to new requirements. They are still seeking their place in the collective. Experienced workers usually have found their place and are not attracted to new goals. We must constantly review the question of who is the most suitable person, and ultimately social necessities need to be the decisive consideration.

TRIBUENE: Once computers and manufacturing centers do all the work, is that work easier or harder?

Ploetz: In our experience, the new key technology substantially reduces heavy manual labor. Products have become smaller and much lighter. At the same time, the new technology increases the share of creative work, makes greater demands on the intellect of the individual. However, I doubt that the introduction of the key technology makes work in general easier for at least some people. Of course many welcome anything new and state quite definitely that their work has become more enjoyable. But not everybody is enchanted. These latter need our help.

Funke: In our factory it is definitely necessary to use one's head more than one's hands, though we are constructing large presses. The work is not heavier but it is more challenging. Overall responsibility is greater, people need to be able to concentrate. And here I am just thinking of work at the computer terminal. Though we must live with the new demands on our work, we must not simply look on the course of the development of working conditions. We will do everything necessary to avoid simply replacing heavy manual labor by heavy mental labor.

We have talked with experts on the scientific organization of labor and with physicians at the general clinic and are now about to jointly develop a long-range conception for the improvement of working and living conditions for those collectives which work with the new technologies. This includes factory medical investigations just as much as striving to reduce the noise still often involved in the new plants.

Popek: It is desirable for the BGL committees and factory physicians to cooperate even more closely on stress removal.

Sommer: While work with modern computers, at the terminal or surveillance of computer controlled processes does indeed change the nature of work, it is not necessarily more stressful either in mental or physical terms. That is so, provided that the appropriate working conditions are organized early enough and consciously enough. Admittedly--and we can already see this quite

clearly--, examinations upon hiring and factory examinations regarding suitability will have to change here and there.

Now it is precisely the advantage of socialism that the improvement of the material and cultural living standard is the objective of all work. Technology is supposed to serve this objective. Therefore, the social effects of high technology are not the consequence but the goal of work. After all, we are not simply concerned to raise productivity but also to provide increasingly more satisfactory conditions for people, for example to reduce noise levels, eliminate monotony, obtain a work content that helps personality development. And here the labor unions and the experiences gained by their committees are in demand.

TRIBUENE: Is the manufacture of production sections requiring few operators compatible with traditional labor union membership relations?

Ploetz: Sections where few people look after a lot of equipment and work in relative isolation are still fairly rare. Still, they do exist, in our automation complex, too. These plants are operating in three shifts, each with just a few operators. Those who supervise these plants used to be a labor union group. They rarely met all of their fellow workers at once. We are now wondering whether we should set up three groups instead, corresponding to the three shifts.

Popek: The same is happening in our combine: We are also considering what labor union work will look like in such sectors and sections, where only a few people are at work. We gained our first experiences in the prisma-2 section. At work there is an old established collective. We allowed it to continue but at the same time set up four shift labor union groups. Possibly we should also consider a closer link between the collection of contributions and personal talks.

Ploetz: We do have something of that nature. Once a week, AGL [departmental labor union board] chairmen and section managers conduct individual talks with fellow workers who have little contact with others. Consequently they are very interested in factory affairs generally. This is useful for our fellow workers who are of course interested in knowing what is going on in the factory, how the plan is doing, what is happening in their own section. Some gossip is also welcome.

Still, we need to reflect further how to make more attractive the kind of shifts where only a few people work in isolation of one another, how to organize an interesting labor union membership life.

Sommer: Even in the computer age, man and his work, his abilities and needs are at the center of events. On the basis of government decisions, consciousness, the technical, economic, educational and social aspects require a wealth of ideas arising from political insights. Labor union involvement presumes clarity of purpose. The labor unions are so resolutely in favor of the key technologies, because they are crucial for the new stage of the economic strategy. Enterprises should therefore promptly begin to create the

prerequisites for the application of key technologies, or, if these are already in place, expand their use. At the same time we must strengthen the alliance between the working class and the scientific-technological intelligentsia by reinforcing teamwork.

Labor union representation of workers' interests will need to be mainly directed to the purposeful backing of the processes related to all this, to the further definition of the socialist lifestyle, the combination of the development of socialist personalities and the improvement of working and living conditions. By doing so, we will respond to our great social responsibility and provide an important contribution to the Eleventh SED Congress.

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ECONOMY

HUNGARY

HAVASI SPEAKS ON AIMS OF SEVENTH 5-YEAR PLAN

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[Article by Ferenc Havasi, member of the Politburo and secretary of the Central Committee: "A Program for Our Social and Economic Development--The Seventh 5-Year Plan," the abbreviated text of a speech given at the 12 November 1985 session of the Central Committee]

[Text] I.

The 13th congress has already dealt with an evaluation of the execution of the Sixth 5-Year Plan and with the chief lessons thereof. Now, before closing the plan period, we consider it again necessary to express a few thoughts in connection with this.

In the past 5 years--under unexpectedly difficult conditions--in the wake of many, many efforts and of the self-sacrificing work of our people we have achieved significant results in the development of the economy, in strengthening the material and technical base of socialism. As in earlier 5-year plans we exceeded some goals and fulfilled others but in a number of areas we did not achieve the prescribed development. For example, we fulfilled the plans connected with reducing the debt and improving the external balance better than imagined. Agriculture essentially fulfilled its plan; the prescriptions for housing, hospital beds and building school classrooms were realized; but we will achieve only 11-12 percent growth in industrial production instead of 19-22 percent; national income also is increasing at a slower pace than prescribed.

For an evaluation of economic development, however, a comparison of plan figures and actual figures is not sufficient. It is not if only because there are cases where a deliberate deviation from the original thinking is necessary in the interest of achieving the chief goals of the plan. For example, the prescribed growth in industrial production in the given product structure would not have improved but would have worsened our situation. So, in addition to the comparable figures, we must note whether, in the extraordinarily swiftly changing world economic environment, we ensured the economic progress most suitable to the given circumstances, whether we ensured a maintenance or improvement of the most important ratios and balance relationships of development. From this viewpoint we can report that as a whole we satisfied

the two chief economic policy goals. We preserved the social achievements of our society and improved the living and working conditions. Popular consumption and real income rose approximately as planned, but we could not preserve the level of real wages--this fell by more than 5 percent. Our external balance situation improved; indeed, we were able to increase our financial reserves and the security of our management. We stopped the increase in non-ruble accounting debt in 1982 instead of 1985 and began to reduce the debt. In the 5 years we achieved a foreign trade active balance of 1.8 billion dollars.

It must be added to all this that we had to realize our plans under deteriorating external conditions. The international credit crisis which sharpened in 1981-82 weighed seriously on the socialist countries. The crisis of world trade deepened in this period, and this made our marketing conditions extraordinarily difficult. The export price level fell by nearly 30 percent in dollars. In the interest of improving the balance we were forced to export uneconomical products and hold back imports. The burdens of the outstanding debt and the conditions for repayment changed substantially. In the past 5 years the interest payments became a good bit greater than planned, which represented a serious burden in our balance of payments.

The changed circumstances of the world economy did not fail to have an effect on the management of our socialist partners either. For this reason our trade contacts could not expand at the pace usual in earlier periods. The volume of our import from socialist countries practically did not increase in the past 5 years, instead of the 15-16 percent increase planned. On the basis of plan coordination the Sixth 5-Year Plan was counting on obtaining about 37-38 million tons of Soviet petroleum; actually we had a possibility 4-5 million tons less than this. With terms of trade deteriorating more than planned we brought our ruble accounting trade into balance with a dynamic increase in the volume of export.

The balance goals were achieved without significant social and economic shocks, and a role was played in this by the fact that we made progress in a number of areas of management. Productivity improved, material use moderated and the specific import use of the economy decreased by approximately 15 percent--as a result of constraints among other things.

Under the given conditions it is no small achievement that we ensured the continuity and stability of our development. During the 5 years national income increased by 8-9 percent, although by less than planned. In an international comparison this is not worse than the average, although there is no doubt that a few countries, including CEMA member states, achieved growth higher than this. We preserved the balance of the commodity base and purchasing power, although it happened that there was a shortage of some products--among others of construction materials, durable industrial consumer goods and, most recently, fuel.

We can also report significant achievements in the work of building the country, despite the fact that the volume of investment decreased significantly in the plan period. Counting the investments which will be completed by the end of the year, we carried out 18 large state investments.

For example, the greatest investment project of our economic history thus far, the first two blocks of the Paks Nuclear Power Plant, went into operation. Within the framework of the Eocene Program the Markushegy, Nagyegyhaz and Many mines and Lencsehegy II Mine are already producing coal and construction of a new briquette factory is nearing completion in Dorog. The Lias Program aimed at expanding the production of coking coal has begun in the Mecsek and a new coking plant is being built in Dunaujvaros.

The Forum, the Novotel, the Atrium-Hyatt, the Buda-Penta and the Aqua Hotel in Heviz were built among others and the number of hotel accommodations increased by more than 10,000. The face of the Budapest inner city and of a number of provincial towns was changed as a result of the reconstruction and new construction. Construction of highways M1 and M3 and of the Metro continued. Reconstruction of the Opera House was completed. In 5 years 80,000 square meters of department stores and shopping centers were created.

Even in the past difficult years there was a way to increase consumption modestly, for a material enrichment of the people and to improve their living conditions. During the 5 years people purchased about 480,000 new passenger cars and essentially the same number of color television sets; 370,000 new dwellings were built and as a result of this and as a result of quality housing exchange the housing conditions improved for 1.5-2 million people; each year 5 million Hungarian citizens traveled abroad, half a million of these to capitalist countries.

The following had a significant role in our achievements:

--Despite the serious problems and the forced measures the leadership of the country could count on the understanding, willingness to act and self-sacrifice of our people, which gave strength and self-confidence for solving the tasks.

--Cooperation with our CEMA partners meant security. The cooperation with the fraternal countries, especially with the Soviet Union, was and will remain in the future a stabilizing factor not only from the viewpoint of our raw material supply but also from that of placing our products on the market.

--The majority of the large socialist factories stood the test of this hard period and proved viable and operable. A program for the complex further development of the guidance system was worked out and its realization was begun.

--We received significant credits from the International Monetary Fund and the World Bank. These played an important role in overcoming our payments problems which sharpened in 1982 and in avoiding a rescheduling of the debt.

Evaluating the period of the Sixth 5-Year Plan we must also speak frankly of the fact that in a number of areas we were not able to make real progress. The technical level and quality of our products hardly improved; the process of product renewal in industry is slow. Neither structural progress nor the international competitiveness of production are satisfactory. The objective conditions for structural change deteriorated; investment, renovation and

import continually declined. The efficiency of production did not improve according to prescription in the material branches; during the 5 years the complex efficiency index expressing the combined yield of live work and embodied work increased by only 6 percent instead of the 12 percent counted on in the plan.

Since we could not counterbalance the increasing costs of improving the external economic balance by improving efficiency we were forced to cut back on domestic use unusually vigorously, and this affected investments primarily. The volume of national economic investments declined by about 16 percent by the end of 1985 compared to 1980, and within this the drop in capitalist import machine investments serving modernization of production was even greater. But we cannot ignore the fact that in recent years our investment attitude and the efficiency of developments have hardly changed; indeed, in certain respects they have deteriorated. The implementation time for investments is long. The ratio of construction work increased, contrary to our intentions, and there is little technical development, reconstruction or investment which can be realized quickly and which will pay off quickly.

Social inequalities sharpened in recent years with the more modest possibilities for improving the standard of living. Our standard of living policy tried to moderate these inequalities. We paid increased attention to improving the situation of those living under different conditions at various income levels, those with low incomes and those suffering social disadvantages. At the beginning of this year, for example, a national survey was prepared concerning elderly people requiring social aid. Using the results of the survey, the councils are offering greater monetary and in-kind aid to those in the most difficult situation as of the middle of this year.

Last year the appropriate state organs worked out a method for determining the vital conditions for existence. This method measures two basic indexes--the social minimum and the existence minimum. The social minimum expresses consumption at a socially acceptable level of the goods and services which have become mass needs. The existence minimum is lower than this, indicating the cost of basic needs for living. But even the existence minimum is higher than the minimum needed for physical existence.

At the 1985 consumer price and income levels the monthly social minimum for a person living in an active household is about 3,050 forints and the existence minimum is 2,500 forints. The national average per capita income is now 4,600 forints per month. The social minimum reaches 65 percent of this and the existence minimum reaches 53 percent.

According to the calculations about 7 percent of the population now lives under the existence minimum. In the second half of the 1970's this ratio exceeded 10 percent. So even under the more difficult circumstances our social policy has tried to improve the situation of these strata.

As so many times before the question now arises: Was it ultimately proper to treat preserving solvency and improving the external balance as the chief priority? Was this requirement of economic policy and the realization of it worth it to the country? International experience gives a suitable answer to

this question--the more than 50 countries which requested rescheduling essentially did not solve their problems, indeed, from a number of viewpoints they got into more difficult circumstances. Their debt burdens increased further and the possibility of development receded further. We were able to avoid this only with great efforts and with the mentioned sacrifices, but we can be certain that it was worth it.

## II.

In the spring of this year the 13th congress of our party formulated those chief social and economic goals which served as a basis for working out the Seventh 5-Year Plan.

The plan coordination talks with the CEMA member countries have been concluded. It is a favorable factor that the volume of our import--in this relationship--can increase by about 2.5 percent per year after having only maintained the level in the Sixth 5-Year Plan. We must increase our export a little more than this.

As a result of talks with the Soviet Union mutual trade will reach 51 billion rubles during the 5 years. The import of fuels, electric power and raw and primary materials is ensured at the 1985 delivery level and there will be a significant increase in the import of natural gas.

Adapting to Soviet needs we will change our export structure; we will increase deliveries of foodstuffs industry and industrial consumer goods, structural materials and the most modern machines. We will increase our participation in the reconstruction of Soviet plants.

In regard to the capitalist world economy the plan calculates that competition even stronger than at present can be expected on the markets of the developed countries; the status of the developing countries will differ greatly from the viewpoint of solvent demand. In the interest of preserving the favorable international money market judgment of our country and being able to finance economic development, a reduction of our outstanding debt will be a basic economic policy requirement in the years ahead as well.

In connection with this question let me turn briefly to the debate about the magnitude of the debt reduction which has accompanied preparation of the plan and to a certain extent the social exchange of ideas. The question was whether a certain sum should be freed each year, from the sum intended to reduce the outstanding debt, to be used to develop the most competitive processing industry branches.

In connection with this idea one must start from the fact that we must certainly achieve the planned reduction of the debt so that the judgment of the financial world about the Hungarian economy should remain favorable. We must conclude from the experiences of recent years that the picture formed of us has improved to the extent that we have been able to make progress in increasing export and in reducing the outstanding debt. Maintaining international trust is vital for us and by stopping the process of debt reduction we would shake the trust shown in us. In addition, in the future we



should try to bring in foreign operating capital to a greater extent than thus far. To do this we must clearly indicate those areas which we want to develop with such assets, and we must make the conditions more attractive for the other party.

The plan proposal does not want to create sources for economic development at the cost of the external balance but rather by increasing domestic source generation. This means stepped-up tasks in the area of increasing efficiency. Debates also accompanied this approach from the viewpoint of both possibilities and needs. According to some opinions the 5-year plan wants to satisfy too many priorities at once and for this reason it is able to outline progress only in a spanning way, as you might say. It is added that improving the external balance, stabilizing the internal balance relationships, making growth dynamic, maintaining full employment and reducing inflation "clash" with one another to a certain extent economically, so one or another of these--the principle of full employment or the anti-inflation program for example--will have to be given up, and the deficit plants will have to be liquidated in a radical way. In this way the budget would be relieved of the supports for poorly functioning enterprises and cooperatives, coming to several billion forints per year, and the money thus freed could be put in the service of economic growth.

Those who think this way--although we recognize the purity of their intentions--ignore, among other things, the essential question that our system cannot make friends with the practice of unemployment and, in addition, the production which was abandoned would have to be replaced by imports in the short term in order to avoid shortages, and this would certainly lead to a deterioration in our external balance situation. For this reason our first task in the interest of changing the low profit, deficit production must be to make production economical and efficient, and only if this is not possible must we eliminate the activity at last.

The guiding principles for the Seventh 5-Year Plan outline a development whose economic policy guidelines include creating conditions for efficiency and balanced development and a further improvement in the external and internal balance. Based on a quickening of economic growth the guiding principles set as goals stopping the decrease in domestic use--in real wages and investment among other things--then gradually increasing such use, realizing efficient and full employment and moderating the rate of increase in the price level.

Five years ago the basic task was to subordinate everything to the balance requirements, which later was modified to put everything in the service of solvency. Then we were anxious that the brake on internal use not cause socio-political shocks; now we are dealing with the possibilities of stepping up economic development. Then we were forced to even the most expensive credits, only to help us through the most pressing problems. Today our situation is different in this regard as well. At the beginning of the 1980's we were forced to take a number of steps which did not agree with the logic of our guidance system; today we are working on a further development of the system in accordance with basic principles.

So in a number of respects the circumstances are more favorable, but the tasks have not become smaller, especially not in the producing branches.

The most important task falling on industry is to contribute to an increasingly greater extent to improving the external and internal balance of the economy, to increasing national income and thus to become one of the stimulators of a more rapid development of our economy. To do this, industry must make more efficient use of its intellectual and material resources, it must accelerate utilization of the domestic and international achievements of scientific research and technical development and it must adapt more flexibly to the requirements of world economy, making better use of the advantages deriving from the international division of labor.

The ratio between the extracting and processing industry branches must be changed to the benefit of the processing industry. The process of changing markets must be accelerated in the machine industry--in harmony with external conditions. The dynamic of non-ruble accounting export by the machine industry must exceed that of ruble accounting export, and this is a significant change, deviating from the trend of recent years.

The role of nuclear energy will increase within energy use and the ratio of hydrocarbons must decrease further. In coal mining the surface production will develop dynamically; in metallurgy the task is to improve quality; in the chemical industry the plan gives preference to the light chemical industry, to pharmaceuticals manufacture, to synthetics processing and to the processing areas in general.

Reducing specific material use is a primary task. With a faster development of microelectronics, use of electronics and biotechnology we want to further the modernization of every branch of industry, indeed the entire economy. The process of technology modernization and product modernization already begun must be accelerated in some areas, giving special treatment to reconstruction.

Our major goal in agriculture and the foodstuffs industry is for production to satisfy domestic demand at a higher level, to reduce expenditures and expand economical export. Production must adapt flexibly to domestic and foreign market needs.

We would like for crop production to increase more quickly than that of animal husbandry. For this reason we will continue to give special treatment to increasing grain production. Our goal is to produce 17.5-18 million tons of grain by 1990. This is not an easy task, because we must increase the already high production level by an additional 10-15 percent.

In the area of animal husbandry we will be able to achieve an increase in profitability and an improvement in export competitiveness, if we make progress in specific yields and in quality improvement. The stressed task in increasing the production of slaughter animals is poultry raising; slaughter hog and slaughter sheep production will increase also. The volume of milk production will increase by 6-8 percent, but the yield per cow must increase by more than 10 percent.

We want to lay the foundations for the goals with a modernization of agricultural and foodstuffs industry technology, especially by increasing the productivity of the soil, with an acceleration of the reconstruction of animal raising sites and with a development of packaging.

Improving cost management, quality and competitiveness and increasing the degree of processing in accordance with market needs are significant tasks for enterprises and cooperatives.

The large socialist farms and the household plot farms integrated by them are the guarantees of the success of our progress in agriculture. Developing the security and cooperation of these historically proven forms of property is our long-range interest.

The efficiency requirements of the plan proposal are very high. The plan is counting on a 17-19 percent increase in the complex efficiency index over 5 years. A 21-23 percent increase must be achieved in production per employee, and we want to stop or at least moderate the deteriorating trend in utilization of fixed assets. Total energy use can increase by only 1 percent per year and electric power use therein can increase by at most 3 percent per year. Thus the energy use necessary for a unit increment of national income can increase by only 0.4 percent; achieving this is a very great task. We are counting on an annual 1 percent improvement in specific material use. These "little" figures represent a saving of several billion forints per year. For example, 1-percent saving of material comes to 13-14 billion forints, which corresponds to 1.5-2 percent of the national income; and 1-percent saving in energy use is equivalent to 330,000 tons of petroleum.

A 3-percent annual increase in national income, a total of 15-17 percent over 5 years, can be called average by international comparison. The countries of the Common Market are counting on an annual 2-2.5 percent increase in the years ahead, while the socialist countries are prescribing a higher rate of growth than ours. It would be good if development were more lively here as well; we are aiming at this, but we cannot give up the requirement that the growth can feed only from intensive sources.

The rate of economic growth which can be planned under the given conditions represents a stepped-up task, but not an unachievable one. In the course of implementing the plan we can rely on more favorable conditions as compared to earlier years:

- investments can increase, if to a modest degree;
- there will be a possibility to increase import--including the import of tools serving technical development;
- a smaller proportion of the increment in national income will have to be turned to improving the external balance;
- our link into the five chief directions of the long term development program of the CEMA member countries (the spread of electronics, automation, nuclear energy, new materials and technologies, and biotechnology) can become a

driving force for the entire Hungarian scientific, technical and production potential.

Development of the economy at the planned pace will make possible implementation of the congress resolutions in the area of internal use. Our possibilities will narrow in the first 2 years in that we have to increase the export surplus compared to this year, and in this period domestic use can increase only more slowly than national income, but later it may reach and then surpass the dynamic thereof. This is an essential change compared to the 1981-85 period when domestic use moderated by about 3 percent.

The ratio of accumulation will increase in domestic use of national income; by 1990 net accumulation will approach 15 percent. At present it is only 11 percent. In 1986 the investments of the socialist sector will remain essentially at the 1985 level, but they will increase beginning in 1987 and will exceed the present level by 25-30 percent in 1990. The investments of the processing industry and the foodstuffs economy will increase more quickly than the average compared to the end of the present plan period and--for the first time in a long time--the investments of the producing infrastructure (especially telecommunications therein) will increase in the same proportion as the directly producing areas. Extra investment possibilities coming from the possible generation of income greater than planned will be turned primarily to the development of these areas.

In the period of the Seventh 5-Year Plan we have prescribed about 80 billion forints for such developments as expansion of the Paks Nuclear Power Plant, the Progress Natural Gas Pipeline and construction of the Bos-Nagymaros Dam System. In the long run these developments will provide a secure energy source for the economy.

### III.

The plan proposal calculates that the sources which can be used to raise the standard of living and living conditions of the population can increase. An 8-10 percent increase in popular consumption and a 9-11 percent increase in per capita real income can be prescribed.

The foundations for a raise in the standard of living of the population which can be felt in the broader sphere of society can and must be laid with the planned increase in performance. Material incentives can help achieve this due to the fact that work incomes receive a greater role in increasing popular incomes in the plan proposal. Maintaining the level of real wages will become possible in 1986; a 5-percent increase will be possible by 1990. Wages will increase in a differentiated way in accordance with our principles. In a socialist commodity-producing economy in the present phase of development the active participation of the workers in socialist construction can be maintained for a long time only by using the principle of material interest, in addition to moral incentives. Workers and families will be differentiated according to performance and the income corresponding to it. At the same time, with a further development of social policy and the tax system, we must reduce disproportionate divisions of income which are unjustified or depend on social status. We can talk about social justice only in connection with carrying our

common burden in proportion with income. It follows from our socialist principles and the feeling of social justice that each person should help carry the common burden on the basis of his personal income and in proportion thereto. Keeping this in view we want to develop our social policy and overhaul our tax system.

We regard as a fundamental task that we maintain and improve where possible a balanced supply of goods to the population. In general the rate of development in the area of the popular infrastructure cannot be increased, but we will produce more resources for most important areas--schools for the large age groups, technical modernization of health services, ensuring healthy drinking water. The ratio of state rental housing construction will increase somewhat compared to 1985.

The real value of monetary and in-kind social incomes and allotments can increase by about 13 percent. The great part of monetary allotments will continue to go through the social insurance system as entitled by participation in work. In the case of some allotments however greater emphasis must be given to the principle of social need, to aid those in disadvantaged situations.

We will require of social policy that it offer in a broader sphere tangible guarantees of the security of existence and aid the realization of our population policy goals. Therefore, outside of the social insurance system, we must develop forms of individual support and principles and methods of offering aid in the interest of aiding the most needy; we have to build up a network of family aid centers and expand residential social assistance.

During the Seventh 5-Year Plan we will start modernizing the pension system. In 1986 we will discuss the proposals in advance with the leading bodies of social organs. The goal of the changes is that the income prospects of pensioners should be more secure and that the differences in their material situations should decrease.

We must begin in 1986 to preserve the real value of existing pensions in a broader circle. First, pensioners over 70 years of age will receive pension increases of the same size as price increases, which is expected to mean 5 percent next year. During the plan period the preservation of the purchasing value of pensions must be extended to an expanding circle of those under 70 years of age, first to those with smaller pensions. In addition, our goals include moderating the loss of value of higher pensions too.

We intend to increase the state share in the costs of raising children in the interest of moderating the differences in per capita family incomes due to number of children. In 1986 the time of paying the child care allotment will be extended until the child is one and a half years old; by 1987 we plan to prepare a system for preserving the purchasing value of the family supplement.

One aspect of the Seventh 5-Year Plan is that it contains a program moderating the increase in the consumer price level. Public opinion today reacts most sensitively to increases in consumer prices. They reached 39-40 percent in the past 5 years; nominal earnings increase remained below this.

One of the greatest tensions derived from the fact that we did not succeed in preserving the real value of monetary social allotments, primarily in the case of pensions and the family supplement. Housing prices increased rapidly and the reduction in the scale of state housing construction made it difficult for young people, large families and the needy to get housing. This is true even if we consider that the state provided about half a million forints in aid under very favorable conditions through various channels for all private housing construction.

The causes of inflation are to be sought primarily in production, as is indicated by the low level of the competitiveness of products and by the lasting deterioration in the terms of trade. But a role was also played by such factors as the lack of balance between domestic supply and demand, the re-creation of shortages and excessive distribution of income which sometimes exceeded the possibilities. In regard to their concrete aspect the price increases can also be related to our central decisions--this was one tool for limiting domestic use, regrouping commodities and incomes needed to service the debt and reducing price supports.

The objective factors figure with greater weight among the causes, so holding back the increases in consumer prices is not simply a question of deciding to do so. Realization of an effective anti-inflation policy is possible only if we develop a competitive product structure as soon as possible and create a supply market.

Some economists agree with the anti-inflation policy but feel that it can be realized only gradually, saying that the increase in consumer prices could be held down by administrative tools for a short time, but later--if it were not well founded economically--it would recoil somewhere. There is truth in this. But when announcing this program the political leadership was also obliged to take into account real social policy and public morale elements. The thinking is that consumer prices can increase by about 5 percent in 1986 and that the increase must be moderated further in succeeding years--to 4 percent in the second half of the plan period. We know that it is not simple to provide support for this economically, but still we cannot give up this requirement, because then we would also relax the pressure for better management.

The plan proposal turns special attention to modernization of the production structure and to defining the related goals, tools and tasks. Central social and economic programs already prepared or being worked out have great significance in this. Nine central economic development programs are linked to the Seventh 5-Year Plan. In addition, the adoption of information technology, robot and biotechnology, extending to virtually every branch of the economy, stands in the center of 11 action programs, and programs are also being developed to solve the background industry problems, to increase economical non-ruble accounting export, for the rational replacement of import, to improve foreign economic activity and for environmental protection.

Laying ever better foundations for convertible accounting export is a stressed task in execution of the Seventh 5-Year Plan. In the interest of aiding the structural transformation serving this we announced this year a system of competitions. In the course of the competitions those enterprises which meet

the requirements will get accumulation tax concessions, state interest rebates on credits and, in some cases, fund awards. The centralized technical development fund will also help create conditions for exportable production.

The enterprises, banks and guiding organs sign agreements on the basis of the competitions. These are contracts and if they are violated the guilty party will bear material responsibility for neglecting the obligation undertaken. We feel that these methods, if they are used consistently and in harmony with the principles of our economic guidance system, can aid in laying reliable foundations for the external balance situation of the economy even over the longer run.

But attention must be called to the fact that the increase in income needed to realize the goals is not yet securely based from every viewpoint.

--One of the strongest limits on growth is the insufficient quantity of energy sources available. The planned energy use is possible only if the transformation of the structure and technical development proceed in harmony with it.

--Nor can we say with a clear conscience that the other basic requirement, the prescribed increase in non-ruble accounting export, however modest, is adequately supported. But we simply cannot formulate goals in this area more modest than the present ones, so it is indispensable that we produce while under way the conditions for fulfillment of this requirement.

--We must also prepare for tensions and hard decisions in the area of investments. There is an understandably increased demand for an increase in investments, and for an expansion of the supports connected with this--but the sources needed to satisfy this demand do not exist. Our problem is not that the intentions are bad but rather that we do not have the money for it. Here also the task is to create a harmony between goals and means basically by expanding sources.

#### IV.

In April 1984 the Central Committee took a stand concerning the further development of the guidance system. Since then new solutions have been born in every area of guidance:

--planning methods have been modernized, the coordination of plans with various time horizons has improved, the democratic principles of planning have broadened and become more profound, the national economic plan has become more open and flexible (and the plan law was modified in harmony with this);

--continual government guidance has become more effective, the range of guidance tools which can be used effectively in the short term has expanded (for example, the various intervention funds), a law sums up the norms for honest management and the limits on dishonest activities;

--the development of a healthier managing unit organizational system better serving small, medium and large enterprise organizations and the division of labor among them has continued;

--transformation of the banking system has begun;

--new forms (loans, leases, securities, joint interest undertakings, etc.) are improving the useful flow of producing assets and other resources;

--the link between the state guiding organs and the managing organizations has changed and the introduction of new enterprise leadership forms has begun;

--economic regulation has been modified substantially (the price system, enterprise income regulation, new earnings regulation forms, a new economic calculation principle).

We will continue next year the unfolding of the processes begun. The switch to the new enterprise leadership forms will be substantially completed, the responsible government organs will work on development of a new enterprise tax system, a conception for personal income taxing will be prepared, the association law will be modernized and we will develop new rules in procedures connected with constantly insolvent enterprises.

We will modernize the banking system. In the course of this we will be careful that the Hungarian National Bank, as the chief financial institution of the socialist state, should be the guide for issuing money and for the circulation of money and will be exclusively responsible for foreign exchange management. It is also an important condition for the decentralization of the banking system and for the effective operation of the business banks to be established that bank of issue guidance remain and strengthen in the chief questions. This involves the realization of the central will and ensuring possibilities for governing.

It is an important condition for our economic policy and for realization of the plan that we continue the further development of economic guidance according to the schedule decided upon. Our work is made difficult by the fact that the situation of the economy is not easy and improving the external economic balance ties down significant resources. It has been made to appear that the more difficult conditions followed from some of the steps of economic guidance. For this reason, when scheduling our progress, we must also consider the extent to which we can get people to understand the program for the realization of the guidance system and the extent to which we can make this generally understandable and repeatable. We are closer to attaining our goals if each of the socialist countries is working on perfecting its own economic guidance and intends to draw on the experiences of the others.

The development of the economic guidance system has an effect on our entire social and economic life. The division of labor between the enterprises and the government is changing, the right of disposing of state property is broadening. New mechanisms for coordinating interests are developing, the interest defending activity of the trade unions is developing and the interest representation role of the Chamber of Commerce is increasing. The task and



authority spheres of the ministries are changing, and modernization of interest representation for the cooperatives is on the agenda as well. And a noteworthy development is taking place within the system of political institutions.

These changes will also put new types of tasks before the party. The party and all of its organizations must be capable of recognizing, bringing to the surface, causing to clash and synthesizing the various interests, and this will require the use of new sorts of political methods. A style of political work using arguments, ideological influence and providing a guide must receive a greater role than heretofore in party work, which also requires that we eliminate some bad, outmoded elements of party guidance of the economy.

A conference of the first secretaries of the county party committees has debated the guiding principles of the 5-year plan and the reasons for them and at the request of the chairman of the Council of Ministers the leading bodies of social, political, interest representation and professional, scientific organs have discussed them. The debates reflected general agreement with the developed economic policy guideline. It was established that although the planning work took place under extraordinarily complicated and difficult conditions it succeeded in preparing a plan proposal in accordance with the resolutions of the 13th congress.

The judgment is uniform in the basic questions; the leadership of the social, political, interest representation, professional and scientific organs and the national economic planners evaluate in the same way our economic situation, the possibilities which can be used to make the economy dynamic and the chief characteristics of the path leading to this. Based on this we can say that the plan proposal is a program which can be accepted and supported by organizations representing every social stratum.

In addition to the general agreement there were also observations of a supplementary, modifying character in a number of questions of detail and in a few essential problem areas of an economic policy character, and reservations were formulated in regard to a few proposed solutions.

Opinions which essentially opposed one another were expressed in regard to standard of living policy and development policy. One approach was that the plan ideas do not satisfy social expectations, while others objected that the plan formulated excessive demands in regard to increasing production and efficiency. In the course of the debates they justly demanded a determination of what was to be done in connection with uneconomical enterprises and activities. Urging a solution is justified. The need to continue the economic reform process was raised at every forum, and there was no debate that carrying it out is one of the basic conditions for realizing our medium-range plan.

Some of the points raised could be used in the final phase of preparing the plan proposal, they contribute to providing a better professional basis for the plan and aid in making the social reception favorable.

The Seventh 5-Year Plan puts realistic goals before our society. We can call it our program with conviction because it undertakes no less than to continue the economic construction work without a break, to cause the unfolding of the intensive sources, improve the standard of living and living conditions and lay the foundations for more vigorous progress.

With the realization of the Seventh 5-Year Plan our homeland and our socialist social order will strengthen further.

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ECONOMY

POLAND

# REFORM PROBLEMS REVIEWED IN CATHOLIC PRESS

Krakow TYGODNIK POWSZECHNY in Polish No 46, 17 Nov 85 p 3

[Article by Jerzy Surdykowski: "Economy of Shortage"]

[Text] The monthly ZARZADZANIE [MANAGEMENT], a separate brochure published as No 13 in 1985, published a consecutive edition of the already famous "500 list." Based on the example of the American FORTUNE magazine, it is the list of Poland's 500 biggest enterprises together with their financial data. Our "five hundred" is not fully representative, however, because it lacks mining and energy enterprises, and a number of others, which, as the authors of the list enigmatically state, could not be placed on the list "for reasons outside our control." Thus it is rather a list of "selected" enterprises, although since the first edition presented by ZARZADZANIE in No 6 of 1984 one can see a certain progress, because on the current list shipyards, some previously absent machine tool enterprises, and the Lubin copper mining and metallurgical combine, are found. When shall we ever have the openness of the economic life in accordance with the "spirit of the reform," evoked on such occasions?

Nevertheless, the "500 list" gives an insight into the economy which is missing from other published statistical data. Its first edition in 1984 caused much sensation by revealing that the first place, totally unrivaled, was occupied by the "Polmos" enterprise [Polish Alcohol Monopoly] (the list is arranged by the sales volume). The situation is the same today: our alcohol monopolist with sales in the amount of 457.3 billion zlotys in 1984, prevails over Plock "Petrochemia," second on the list, nearly twice! The overwhelming domination of vodka becomes even more evident when we take into consideration the sums directed by the enterprises to the state budget. Thus in 1984, "Polmos" paid the turnover tax of 384.6 billion zlotys (in addition to the 8.8 billion zlotys of the income tax), while "Petrochemia," second on the list, only 81.6 billion zlotys. The turnover tax of "Polmos" alone, amounts to as much as 56 percent of the total amount of this tax in the whole of the Polish processing industry!

More interesting, however, than easy jokes about a "drunken budget," are reports concerning the whole of the economy. Here the list reveals extremely interesting, although hardly optimistic phenomena. Thus it turns out that the most profitable (besides alcohol production), are enterprises producing various consumer goods purchased not by the state, but by citizens (automobiles, home equipment, furniture, pharmaceuticals, etc.), and petroleum

products (gasoline!). The most profitable factory in People's Poland is Jelenia Gora's "Polf," with 146.5 percent profitability! [----] [Law of 7.31.81 on the control of publications and shows, article 2, point 6 (DZIENNIK USTAW No 20, position 99, amended 1983 DZIENNIK USTAW No 44 position 204)]. Among the branches of industry manufacturing the means of production, good profitability is shown by the computer industry, repair shipyards, the above mentioned mining-metallurgical copper combine (the only heavy industry giant with an acceptable level of profitability, achieved, however, by an actual relief from the turnover tax, of which it pays only 6 billion zlotys), and various smaller enterprises. On the other hand, losses, or very small profitability, are shown by various giants of heavy industry, metallurgical and chemical, headed by the Katowice Steel Mill, which supports itself thanks to 9.2 billion zlotys of yearly subsidies. As for industries working for consumer needs, the state subsidizes only enterprises of the meat industry and the State Grain Enterprises. Agriculture is also indirectly subsidized through factories of manufactured fertilizers.

The structure of wages in our industrial giants is, however, a complete negation of the structure of their efficiency. Thus, wages are the highest precisely where the profitability is not great. And, the reverse: there, where the state earns a lot, it pays its employees poorly. One can draw the sad conclusion that in this domain the "spirit of the reform" is a complete failure, wages are still the result of bargaining behind the scenes by pressure groups, and the function of the large numbers (including force) of the large industrial working milieux. Incentives that are to tie profit with wages are still nonexistent.

The action of these pressure groups connected with the Polish steel industry are shown in the article by Tomasz Gruszecki and Andrzej Zawislak in ZYCIE GOSPODARCZE No 40 under the significant title, "Rights Without Responsibility." Thus, "the socialist barons" of our metallurgy, in an effort to protect themselves from the dangerous influences of the reform, try to assemble a "Community of Iron and Steel Enterprises," a large bureaucratic structure, taking away from enterprises a large part of their rights but assuring all interested parties a non-profitable, safe, highly paid existence under the protective wings of the branch lobby. Its bargaining power will be incomparably larger than the power of the association-type structures that were overturned by the reform. It will certainly stabilize for decades to come not only the primacy of wages of nonefficient industries, but also the exceptionally unfavorable structure of investments always giving priority to the industries that are the heaviest and most costly. A similar structure, and a compulsory one, has already been created in mining in the form of the so-called "mining companies." The attitude of metallurgy employees to the proposal offered them by the ministry bureaucrats varies, as shown by the addendum "Selfmanagement and Life" to the same issue of ZYCIE GOSPODARCZE. Thus, in Huta Katowice, the selfmanagement organization accepted access to the "Community" without reservations, and by the same token, the loss of the majority of its current rights. In Krakow's Nowa Huta, the acceptance was expressed with many reservations. On the other hand, the selfmanagement organization of the Huta Bierut in Czestochowa categorically rejected the offer as contradictory with the laws on enterprises and selfmanagement of 25

September 1981 and other legal acts of the reform. One should not be surprised that the adherents of "going back" are in the majority: employees want high wages and blessed peace, the rights of selfmanagement organizations are not excessively large anyway, so why argue? "The spirit of the reform" will probably be exorcised from here too.

In full and very dramatically, one of the most eminent Polish economists, Prof Jan Mujzel, formulates this in an article under the telling title, "On the Second Level of the Economic Reform," in ZARZADZANIE No 9 of this year. The Professor says straightforwardly that the reform is stuck, that the last two years from the point of view of progress have been wasted. The goal defined by the document of the 9th Party Congress entitled, "Directions of the Economic Reform," is very remote, while everything shows that the economic bureaucracy threatened by the reform will do everything to prevent this goal from ever being achieved. Instead of a daring course toward "a socialist market economy," the last two years brought a counteroffensive by the bureaucracy, the tightening of the rationing system, the weakening of the pro-efficiency incentives. The "second stage" postulated by Prof Mujzel consists of not only daring changes in the economy, but also around the economy. As the author writes: "The problems of socialization, which are key problems according to the conception of the reform, still await solution. Among them are an increase in realistic limits of the representation of representative bodies and development around the economic micro-decisions of a system of collaboration of the state authorities with freely [emphasis in the original] forming, independent, and selfgoverning social organizations representing the working world and various milieux, and also with social opinion through the appropriate mass media." Nothing more needs to be added; one could only formulate a catalogue of urgently needed concrete moves, including political ones, that would serve such socialization. This is not any wishful thinking of the advocates of the "second stage," the matter is documented in still valid state documents--except that the blockade of groups threatened by the reform, with impunity, easily brings the above to the shoals; especially since there are no organized social forces able to resist such antireform pressure. This is rather strongly pointed out by the discussion of directors of enterprises on next year's conditions of management, written by Andrzej Krzysztof Wroblewski and published in the same issue of ZARZADZANIE under the title, "Rules of the Game." If things proceed in such a way, being stuck will become permanent.

Where does it come from? Why the inefficiency in this model of the economy, why the paleness of the reform impulses, since any clear mind sees the necessity of the final breakup of bureaucratic centralism? This is rationalized by the Hungarian Professor Janos Kornai, in a book published in English five years ago under the title, "Economy of Shortage," recently published by the Polish Economic Publishers [PWE] under the euphemistic (oh these careful editors!) "Shortage in the Economy." This book, which certainly is the most important economic book which has come out in the last few years, is reviewed at length in the same issue of ZARZADZANIE by Prof Janusz Goscinski. Its title, not only according to the dictionary but also to the intention of the author and the sense of his arguments, ought to be "Economy of Shortage." Prof Kornai (the author of "Anti-Equilibrium" which was

published in our country too a few years ago) takes as the subject of his deliberations the centralized economy of "real socialism," such as has come into existence in the countries of this system. [----] [Law of 31 July 81, on the Control of Publications and Shows, article 2, point 6 (DZIENNIK USTAW No 20, position 99, amended: 1983 DZIENNIK USTAW No 44, position 204)].

Is there any rational way out from the "economy of shortages?" In my column entitled "Advocatus diaboli," in No 8 of ZARZADZANIE, I wrote: "Thus, perhaps, the priority should be given not to those proportions, established years ago, in which mining plays the first role, but to any production verified by the market, that is, sold with profit for concrete money? No matter to what branch of industry it belongs, no matter whether it overturns the traditional structure of wages, and no matter who finances it. If something can be sold, then it is worth exactly as much money as its market price. That is all. (...) Of course, such a formula of economic acceleration will evoke loud protests of both merited persons and sacred cows (which give no milk!)."

And that is the point. A journalistic optimist stumbles on the same rock which Janos Kornai examined and described in a professorial way. The economy cannot be messed about with impunity, however. In No 7 of WEKTORY, the organ of the Polish Economic Society (another little periodical with a small circulation), we find an article by Ewa Wrobel and Marek Misiak, entitled "Scenarios of the 1985-1990 Markets." This is a summarized description of the computer forecasts of the development of the market situation in the forecoming five year period, prepared by the larger team of the Institute for Price Studies at the Bureau of Prices. [----] [Law of 31 July 1981 on the control of publications and shows, article 2 point 6 (DZIENNIK USTAW No 20 position 99, amended : 1983 DZIENNIK USTAW No 44, position 204)].

We remember the shock which the computer forecasts of the authors of the "First Report of the Club of Rome" evoked in the world in 1971 (and before that, the computer forecasts of Prof Jay Forrester), warning against the sudden breakdown of ecology and the world economy, if the trends of the excessive use of raw materials and environmental pollution, so characteristic to the 50's and the 60's, would continue. Those trends in the present decade are already somewhat different, although not necessarily due to the good will of the "industrial barons." The computer warning, of which WEKTORY presented a fragment, has met, however, with dead silence.

Will the only good of the above be that which the Trojans had from the warnings of Cassandra?

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ECONOMY

POLAND

#### ENTERPRISE MANAGERS POLLED ON REFORM: PART TWO

Warsaw RZECZPOSPOLITA in Polish 5 Dec 85 supplement REFORMA GOSPODARCZA No 63  
pp 1,4

[Compiled by Pawel Karpinski: "Directors of Enterprises on the Economic Reform and the Directions of Its Development: The Results of Opinion Polls--Part Two."]

[Excerpts] Before the National Party-Economic Conference (Poznan 31 May--1 June 1985) an opinion survey was conducted among the directors of enterprises. The first part of the results was published in No 61 of REFORMA GOSPODARCZA. Below, as announced, we publish the remaining text discussing the results.

#### IV. Costs and Profits and Their Distribution

In the evaluation of the directors, close to 95 percent of the enterprises put their cost calculations in such an order that they could determine the place of origin of the costs, their origin and kinds. Over 66 percent of directors estimate that the application of the formula of justified costs in the establishment of prices contributes to the discipline of the cost accounting in the enterprise. About 25 percent of the directors do not share this view, and 8 percent have no opinion on this question.

Table 39

Answers	In general	Industry
yes	29.0	27.3
rather yes	37.1	38.7
rather no	12.8	12.3
no	12.7	14.3
difficult to say	8.1	7.1
no answer	0.4	0.2

The decisive majority of directors (about 85 percent) believe that the current regulations with regard to the extent and manner of classification of the costs of the enterprise are proper for the conducting of the economic

accounting and realization of the principle of self-financing. 12 percent are of a different opinion and 3 percent have no definite view on this question.

Close to 80 percent of the directors are of the opinion that tying the increase in wages not subject to the payments to the state Vocational Activization Fund [PFAZ] but to the increase in net sold production, encourages the lowering of material costs. 10 percent of the directors do not share this view and others have no opinion in this matter. Regardless of the branch the enterprise belongs to, the decisive majority of directors are of the opinion that the application of the net measure encourages the lowering of the material costs, and the largest percentage of the positive answers was expressed by directors of metallurgical enterprises (88.2 percent) and chemical enterprises (86.7 percent); on the other hand, the smallest percentage of positive answers was noted with regard to fuel and power enterprises (62.9 percent) and the wood-paper industry (72.9 percent).

About 65 percent of the directors are of the opinion that the change of the formula of income tax (from progressive to linear) contributes to an increase in the enterprises' interest in lowering material costs, 26 percent of the directors do not share this view, and over 8 percent have no clear opinion on this question.

What draws one's attention is the great diversity in the evaluation of the changing of the formula of the income tax. The positive evaluations were expressed most frequently by the directors of metallurgical industry enterprises (76.5 percent), the chemical industry (75.5 percent), and the electro-machine industry (73.0 percent).

In the opinions of 46 percent of directors in the wood-paper industry, 30 percent of the directors in the fuel-power industry, and 28 percent of the directors in light industry enterprises, the change in the formula of the income tax did not increase the interest of enterprises in lowering material costs.

In the case of 17 percent of the enterprises participating in the questionnaire, the advantages obtained as the result of reliefs in the income tax and other forms of preferential treatment are greater than the advantages resulting from the increase in productivity and lowering of costs. In the case of 73 percent of enterprises, the situation is different, and 8 percent of the directors could not give a straight evaluation.

The greatest percentage of affirmative answers (advantages resulting from reliefs in the income tax and other forms of preferential treatment are greater than advantages resulting from the growth of productivity and lowering of costs) was obtained in the case of chemical industry enterprises (31.1 percent), electro-machine industry (30.8 percent), and fuel and power industry (29.6 percent).



## V. Foreign Trade

In the questionnaire sample, about 55 percent of the enterprises export to the capitalist countries. Close to 90 percent of those exporting to capitalist countries estimate that the system of foreign exchange allowances is an important factor in the growth of exports. 84 percent of the directors of those enterprises believe that the system of foreign exchange allowances and the principles of disposing of hard currency funds obtained in that system, secure their rational utilization. 12 percent of the directors have a different opinion and 4 percent have no opinion in this matter. This is illustrated by the comparison below of answers to the question whether the system of foreign allowances and the principals of their utilization secure a rational utilization of foreign exchange.

Nearly 90 percent of the directors of industrial enterprises which are exporters to capitalist countries are of the opinion that the system of foreign exchange allowances is an important factor in the growth of exports. Here one should note the low degree of branch differentiation in affirmative answers (yes, rather yes).

The majority of directors of industrial enterprises (55 percent) believes that the current principals of supplying enterprises with foreign exchange have proven themselves and ought to be retained. 18 percent of directors are of the opposite opinion and 26 percent of the directors have no definite opinion in this matter.

Nearly 80 percent of directors of exporting enterprises expressed the opinion that the enterprise they manage are involved in exports motivated by economic advantages which can be obtained by it (reliefs in income tax, reliefs in PFAZ payments, and others).

Nearly 80 percent of directors of exporting enterprises believe that the enterprise undertakes export decisions motivated by systemic economic advantages brought by this activity. Positive evaluations are differentiated, from 50.0 percent for the metallurgical industry to 87.2 percent for the electromachine industry.

26. Among export enterprises 51 percent assert that it can influence the economic conditions of the export of their products (price negotiations, supply conditions, the selection of the directions of export, and others). On the other hand, 45 percent are of the opposite opinion. This is illustrated by the comparison of the answers to the question whether the enterprise has an influence on the economic conditions of the export of its products (price negotiations, supply conditions, choice of the direction of exports, and others).

Over 47 percent of the directors believe that from the point of view of stimulating exports and facilitating the access of enterprises to foreign exchange, uniform branch rates of foreign exchange allowances ought to be

introduced. 19 percent of the directors do not support this proposal and 32 percent have no clear opinion in this question.

The majority of directors of enterprises of the following industries: wood and paper (58.3 percent), light industry (57.8 percent), chemical (55.6 percent), and electromachine (53.6 percent) supports the above proposal. On the other hand, very differentiated are the percentages of the negative answers: from 16.6 percent for the wood and paper industry to 52.9 percent for the metallurgical industry.

Over 67 percent of the directors are of the opinion that enterprises which have foreign exchange accounts at their disposal ought to be allowed to sell the surplus--above their own needs--of foreign exchange by unlimited bidding organized by the bank. 11 percent of the directors do not support this proposal and 21 percent have no formulated view on this issue.

The largest percentage of directors supporting the above proposal is in light industry (80.7 percent), in the wood and paper industry (75.0 percent), and in the electromachine industry (74.9 percent).

The largest percentage of negative answers was noted in enterprises among the remaining branches of industry (27.3 percent), in the chemical industry (20.0 percent), and the metallurgical industry (17.7 percent).

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ECONOMY

POLAND

EDITORIAL COMPLAINS ECONOMISTS NOT HEEDED

Warsaw ZYCIE GOSPODARCZE in Polish No 43, 27 Oct 85 p 12

[Article by S.C.: "Worth Listening To"]

[Text] The press commentaries, constituting the aftermath of the election campaign, stress both the enormous tasks which the 9th Sejm is facing, and the fact of the rather thorough change of guard on the benches of the deputies. This causes some concern, because as experienced parliamentarians emphasize, one must learn to be a deputy. In the meantime, the social expectations connected with the new Sejm membership are very large and there will not be much time for learning, because there is no indication that the present term could be less intense than the previous one. In this situation, the role of Sejm experts and various consulting bodies grows. These developed in recent years and ought to help in focusing the Sejm on political, social and economic problems, by suggesting the methods and forms by which the goals of the deputies could be achieved.

In the last issue of PRAWO I ZYCIE, an experienced parliamentarian and eminent lawyer, Zdzislaw Czeszejko-Sochacki, asserts that politics does not accept amateurism, it requires knowledge and predisposition and that good intentions alone will not suffice. At the same time, he regrets that the fulfilling of universally accepted postulates about the need for increasing the number of lawyers in the membership of the Sejm encounters difficulties. As the reason for these difficulties, he sees "a contradiction of feelings and intentions," desires that the law should provide for the domination of the principles of social justice, and at the same time irritation that the law creates barriers which lead to seeing lawyers as formalists.

There is a lot of truth in this observation, but it applies not only to lawyers but also to economists. There is an additional element in the selective view of the law, because economic laws, as opposed to those passed by the Sejm, cannot be changed. Economists are often blamed for it, though at the same time one wants them to find ways of solving various difficult economic problems.

I do not wish to glorify economists here. Some of them have many sins on their conscience. I also do not wish to give an exceptionally high rank to their conceptions and proposals. As Professor Bobrowski said once, however, the proposals of economic advisers need not always be implemented but must

always be listened to. Experiences of the past attest that the listening varied and that the proposals of economists sometimes evoked more irritation than reflection.

This remark is occasioned not only by the fact that the new Sejm will have to solve many complicated economic problems and therefore, perhaps, it would be worth paying a little more attention to what the economists are saying. The approaching congress of the Polish Economic Society [PTE] and the Congress of Polish Science [are also reasons]. There exists a gap between the state of our economy and the achievement of the economic science, which undoubtedly is a source of frustration.

Perhaps this thesis will be considered an exaggeration, so let me recall a few facts from the past. Let us begin with the mid fifties. Those years witnessed an enormous animation of the economic milieu, the direct program of Professor Langer, and then the huge theoretical and practical output of the Economic Council. Its famous theses were unquestioned, but soon quietly shelved. We should also recall the attempts undertaken many times in the sixties, both in the form of concrete proposals (formulated, among others, by economists of such class as Professor Kalecki), and in the form of various experiments. These proposals, however, usually irritated politicians, and experiments were agreed to, but there was no attempt to popularize their results. By the end of the sixties, the market, and many economists with it, were "eliminated" as an element which can be used in management.

From the decade of the seventies, one usually remembers "court economists." They, however, were only a part of the truth. In that time the large economic unit model was elaborated. If implemented, the model would certainly be better despite its many weaknesses, than the existing system of management. Many economists warned of excessive expansion of investment outlays, against the debt trap, and against ignoring economic realism and any calculus. Again the result was irritation and sometimes more than just irritation.

I am writing about it because currently the economic advisory body has been built up and even somewhat institutionalized. Nevertheless, there are people who consider lawyers formalists and economists theoreticians detached from life and its needs. It is true that no one is irritated at them officially anymore, but the point is not to like economists but to use their knowledge and experience in the right way. After all, that is why we educate them.

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#### SHIFTS REPORTED IN WARSAW PACT MILITARY DOCTRINE

Cologne DEUTSCHLAND-ARCHIV in German Vol 18 No 11, Nov 85 (signed to press 25 Oct 85) pp 1198-1208

[Article by Walter Rehm: "Changes in Communist Military Doctrine"]

[Text] In an article in DEUTSCHLAND-ARCHIV, No 1, 1985, Johannes Kuppe drew attention to "New Aspects of the Communist Theory of War" by examining a number of GDR sources and one Hungarian study. The conclusion he reached was that it was too early to arrive at a definitive judgment regarding the material at hand. His feeling that "things had begun to move" in his chosen field has since proved to be accurate. More and more often, the classical Marxist differentiation between "just" and "unjust" wars is being questioned and even strictly refuted insofar as nuclear war is concerned. In DEUTSCHLAND-ARCHIV No 7, 1985, Wolfgang Bruns called attention to the increased use of the term "logic of the nuclear age" by GDR scientists. In still another piece which appeared in DEUTSCHLAND-ARCHIV (No 8, 1985), Franz Loeser raised the question of whether this new approach to the nuclear war issue constituted a "genuine change of heart or a pragmatic, tactical move." The Warsaw Pact sources cited and evaluated as well as the author's personal experiences raised doubts about the sincerity of the new line. It still seemed to be impossible to give an unequivocal answer to the question.

Since there are some additional articles on this subject from the GDR, it would seem to be a good time to reevaluate the situation.

In the following article the term "military doctrine" will be used, since that term is commonly used in the East Bloc. The definition of the term as it appears in GDR dictionaries is wide-ranging and long-winded; we will excerpt the most important aspects of it:

- the official and binding fundamental concepts regarding the nature, preparation and conduct of wars prevailing in a state (or military coalition);

- there is a distinction between the socio-political and the military-technological aspect of military doctrine;
- military doctrine is primarily based on the characteristics of the social and governmental system which it serves;
- the theoretical foundations of military doctrine are dialectical and historical materialism; the Marxist-Leninist theory of war and the armed forces as well as the teachings of modern socialist military theory.

Based on these premises, the following Soviet definition appears quite logical: "Military doctrine always possesses class character; it is a reflection of the economic and thus the socio-economic interests of the class which is at the head of a particular state...The policies of a nation determine its military doctrine."

#### From Military Superiority to Military Balance

Up to the mid-seventies, the operating principle was the need for military superiority of the Warsaw Pact armed forces over those of NATO. The reason given for it was the following double equation: socialism=peace; imperialism/capitalism=war. This equation is still adhered to today as a political principle; but, as will be shown below, it has been adapted to the present shift in military doctrine.

Basing his argument on a wealth of quotes, Guenther Wagenlehner has documented the unrestricted demand for military superiority on the part of the East Bloc in years past.<sup>3</sup> To give an indication of the shift which has taken place, we will now quote from two statements by Erich Honecker. "If more and more relations of peaceful coexistence are beginning to emerge on our continent," Honecker said at a meeting of Warsaw Pact defense ministers on 10 February 1972, "then this is due above all to the efforts of the nations of the Warsaw Pact and to a large extent to the military superiority of the socialist coalition."<sup>4</sup>

At that time, the superiority factor was still being used as a stabilizing element, but there were some careful hints in the direction of military balance. On 30 June 1976, at a conference of the communist and workers parties in Berlin, Honecker said: "We believe we can justly say that the present power relationship makes it possible to curb the aggressive circles of imperialism and to safeguard peace and security in Europe under peaceful conditions."<sup>5</sup> In 1978, the Soviet Union itself scuttled the superiority theory altogether. The joint declaration issued

by the CPSU general secretary and then Chancellor Helmut Schmidt on the occasion of the Brezhnev visit to Bonn in May 1978 contained the following passage: "Both sides consider it important that neither should aspire to military superiority. Their position is that approximate equality and parity are sufficient to safeguard defense."<sup>6</sup>

Inside the East Bloc, too, the new view became part of the official vocabulary, e.g. now that political détente had been achieved, military détente would follow. A corresponding statement was contained in the Brezhnev speech on the occasion of the 30th anniversary of the GDR on 6 October 1979 which also made reference to the so-called NATO dual resolution which had already become part of the debate by that time. After pointing out the dangers of the deployment of medium range nuclear missiles in Western Europe, Brezhnev said: "As far as the Soviet Union is concerned, I have said over and over again that we are not making an effort to achieve military superiority."

Starting in 1978, additional calls for maintaining military balance which, in the Eastern view, had already been attained, were issued in connection with the abovementioned NATO resolution. One major rationale for accepting parity probably stems from the MBFR negotiations in Vienna. Any adherence to the superiority doctrine would have had an adverse effect on the Eastern negotiating position there. In addition, tacit acceptance of the NATO resolution would have been tantamount to an admission that the East Bloc really was militarily superior and that the modernization resolution therefore was justified.

It is interesting to note the subsequent change in language on the part of GDR military theorists who no doubt took their cue from the Soviet Union. Approximately as of the fall of 1980, the adjective "military" as in "military balance" was replaced by the adjective "military-strategic."

This is presumably designed to create more room for maneuver at the Vienna negotiations and on other occasions. In one particular article,<sup>8</sup> the author states that this term is "relatively new" and that it was "deliberately used for the first time by the socialist states."

This is not the place to deal with the "strategy" concept generally or its military significance in particular. This is what the already cited GDR source has to say about the concept and the whole idea of "power relationship:" "To be sure, the military power relationship is an exceedingly difficult problem. In order to analyze it, one needs to apply a large number of quantitative and qualitative as well as global and regional factors. But above all, one must start out with the overall total of opposing military forces. Any attempt to single out and compare individual weapons systems or individual countries or even regions would lead to false conclusions. Overall, strategic balance is a re-

flection of the fact that neither side has the capability to carry out an annihilating first strike and also is not in a position to attain it."

The great importance attached to the new wording by the East is reflected in the title of an article in MILITAERWESEN [Military Affairs]: "Military-Strategic Balance--An Obstacle for the Imperialist Aggressor."<sup>9</sup> "Military-strategic balance between the Soviet Union and the United States and between the Warsaw Pact and NATO constitutes a new and positive factor in world politics which can no more be rescinded than the vital strength acquired by real socialism," the article says. GDR defense minister Gen Hoffmann, too, has been using the new terminology for some time now.<sup>10</sup> At a military-political forum attended by top FDJ functionaries on 3 February 1984, Hoffmann said: "With good reason we have been pointing out time and again that the approximate military-strategic balance in Europe, the military balance of power between NATO and the Warsaw Pact must be maintained."<sup>11</sup>

For obvious reasons, however, the communist military theorists cannot generally accept the equality theory as far as military combat effectiveness is concerned. In some respect, the socialist fighting man must continue to be superior. "The historical superiority of socialism over imperialism" therefore continues to be propagated. One such article is entitled: "Values of Socialism and Defense Preparedness."<sup>12</sup> The author lists the following categories in order to underscore the ideological and moral superiority of the fighting man under real socialism:

- insight into the historic mission of the working class;
- understanding of the historical laws governing our age;
- knowledge of German history and the history of the revolutionary working class;
- a fighting man fighting for his own cause;
- awareness of the aggressive nature of imperialism.

On a visit to army units on 21 June 1984, Erich Honecker stated that imperialist armies "can never hope to attain this type of ideological attitude or this type of resolve among all fighting men."<sup>13</sup>

For a time, official statements were limited to taking note of approximate military balance achieved on the strength of socialist military efforts. In 1979-1980, however, a major propaganda campaign was launched with the slogan "In Pursuit of the Specter of Military Superiority." To inaugurate



the shift in the early eighties, Alexander Svetlov used this slogan in a German-language pamphlet which may be obtained from the Soviet embassy in Bonn.<sup>14</sup> He argues that the shift was preceded by a "favorable development in international relations." Erich Honecker made the same point in an interview which appeared in NEUES DEUTSCHLAND on 18 August 1984. "The continued existence of military-strategic balance," he said, "has been a major factor in the preservation of peace."

The charge that NATO--and the United States in particular--was trying to alter the existing military balance in its favor made it plain that a new image of the enemy was about to emerge. The alleged threat to balance by the United States was now vehemently attacked by the SED.

In a March 1985 article commemorating the end of World War II, Honecker wrote: "With their adventurous as well as futile plans to achieve military-strategic superiority over socialism, the war mongers are attempting in the most blatant way to roll back the results of the Second World War and the developments which followed it."<sup>15</sup> Speaking to the SED central committee in November 1984, Honecker said: "All the peoples of Europe are able to live with the existence of two German states. But what cannot be tolerated is any attempt to upset the balance of power which has been achieved."<sup>16</sup>

GDR military publications which often lag behind in their use of new ideological terminology took over these arguments in an analysis of a Honecker speech in preparation of the 11th SED party congress. The attempts by imperialism to destroy the existing approximate military-strategic balance and to achieve superiority...have resulted in the most serious threat to world peace since the end of World War II."<sup>17</sup> Without even mentioning the former calls for superiority, LT GEN Ernst Hampf, deputy director of the main political administration of the NVA, wrote as follows: "The Soviet Union and the other nations of the socialist coalition have succeeded in overcoming the military superiority of imperialism and in achieving an approximate military-strategic balance which must not be surrendered at any cost."<sup>18</sup>

#### From "Just" Wars to a "Philosophy of Peace"

While the shift in communist military doctrine described above was circumspect and gradual, further substantive changes occurred rather quickly and abruptly. Until recently, the theory of just and unjust wars was a basic element of Eastern theories regarding war and the armed forces. The different categories of war were listed in an article by J. Kuppe.<sup>19</sup> The piece contains a relevant quote from an address by Hoffmann in 1975 and a substantially identical statement by two NVA officers in 1981--where the theory of just and unjust wars is said to apply even in the case of nuclear war. The sole criterion for evaluating armed conflict was not the weaponry used or its possible consequences but the social content of the war itself.

As an indication of the speed with which the up to then untouchable theory was dropped, let me cite two more instances (in addition to Kuppe's) for the validity of the old line. As late as 1982, Dietz-Verlag, "on behalf of the scientific council for Marxist-Leninist philosophy," published the second edition of a book entitled "The Unity of Socialism and Peace" which also dealt with the subject we are discussing here. The authors, Wolfgang Hocke and Wolfgang Scheler, came to the following conclusions among others: "Relinquishing the distinction between just and unjust wars would inevitably condemn the forces of peace to powerlessness in the face of the imperialist military machine which stands ready to commit aggression... Thus, the Marxist-Leninist distinction between just and unjust wars is by no means obsolete today but even given the threat of nuclear war it retains its validity in principle." The names of the authors--who are both officers of the NVA--reappear as part of a six-man authors' collective which published a book entitled "The Philosophy of Peace in the Fight Against the Ideology of War" in 1984.<sup>20</sup> The publisher of the book was the Friedrich Engels military academy in Dresden. This would seem to be sufficient for verifying the official nature of this publication, i.e. it had the stamp of approval of the political and military leadership of the GDR.

This book contains the following admission: "...that more and more responsible people are concerned about the issue of the origins of the threat of war and are giving thought to the question whether war in the nuclear age can still serve as an instrument of policy; whether it is still legitimate in our age to differentiate between just and unjust wars; whether all previous ideas about war are obsolete in view of the predictable consequences of a nuclear war."<sup>21</sup> In view of these considerations, the authors arrive at the following intermediate conclusions: The present situation, they say, "is characterized by the fact that the means of warfare by now exceed war aims." Nuclear war "has lost the meaning which war was able to provide as a social manifestation of class society."<sup>22</sup> This clearly ties into an article by Prof G Ch Shakhnazarov entitled "The Political Logic of the Nuclear Age," also cited by Kuppe.<sup>23</sup> For the sake of clarity, let me cite the crucial sentence contained in this sensational article: "There are no political aims which would justify the employment of means which might lead to nuclear war." This new line applies to all of the most recent statements from the GDR on the subject of nuclear war.

Once this basic premise is adopted, it is logical to incorporate the cost benefit argument in such considerations. While the Soviet author calls for adhering to the precept that "the means must be adequate to the aims to be achieved," the authors of the abovementioned book speak of a change in the "aims-means relationship" in case of a possible nuclear war. Their conclusion, too, is that any reasonable sort of policy must abandon nuclear war as an extension of policy. But in contrast to Prof Shakhnazarov, the officers of the GDR military academy at least try to retain the old arguments. "Nonetheless, this entails a change in the qualitative aspect of war," they write. "Under the circumstances, there

is no reason to revise or negate the scientific theory of war as the extension of politics of classes and nations." Such artful language makes plain the difficult situation in which the GDR ideologues find themselves as a result of the new approaches originating in Moscow. They do not provide a clear answer to the question of the validity of the distinction between just and unjust wars. On the one hand, they say that this distinction "has not become irrelevant" in the nuclear age; but on the other hand, they raise the question in the very same paragraph of whether "the new quality of war--particularly the extent of its consequences--still admit of this distinction." They then go on to say that it is impossible to arrive at a meaningful answer, if one adopts "an abstract view" of nuclear war "as distinct from the military-political situation dictated by concrete historical events." In evaluating a war, it is impossible to set aside the social contradictions "inherent in the policies which are continued through violent means in the war between imperialism and socialism."

This goal is also reflected in the book title "The Philosophy of Peace in the Fight Against the Ideology of War" because it assigns the customary roles to socialism and capitalism. The contrast between philosophy and ideology is meant to underscore the distinction on the intellectual level.

Shakhnazarov, on the other hand, leaves all such niceties aside and states his case along far more realistic lines. As part of his analysis, he deals with the "world historical mission of the proletariat;" nor does he leave the inevitable class struggle aside. But even in this context he issues an emphatic warning. "One should and indeed must keep the proper political goal in mind," he writes. "Setting the wrong goal can lead to serious negative consequences even under normal conditions; but under conditions of nuclear confrontation it could lead to disaster." He is just as explicit in assessing the dangers of an ideological confrontation, admitting that the "struggle of ideas" cannot be brought to a halt even though political logic would make that appear imperative. "But one can and indeed must see to it that this struggle does not turn into a 'psychological war,' which is only one step away from hot war." Shakhnazarov rejects the contention that the existence of mankind is not threatened "by the ideological dispute" between East and West in the nuclear age. In this instance, too, his sense of reality is quite admirable. After all, "the struggle of ideas" pursues the aim of both sides to influence political consciousness in the opposing camp in the direction of one's own views. This even applies to situations involving so-called "security partnerships."

As proof of the aggressiveness still being displayed by others in the Eastern camp, let me quote COL Dr Loose, himself also an officer at the Friedrich Engels military academy. In calling for intensive political-ideological training, Loose still wrote in the fall of 1984 that there is a need for "hatred of the imperialist confrontation politicians," adding that this is "a moral sentiment which in itself is transformed into a socialist value."<sup>24</sup> It will be interesting to see whether statements of this kind will continue to appear in the GDR in the future in view of Prof Shakhnazarov's warnings and the changes in the GDR's own military doctrine.

As a result of the new directions taken by military doctrine, the concept of "peaceful coexistence," thus far characterized by the East as a continuation of ideological confrontation will have to be reevaluated. The "Philosophy of Peace" authors, for example, have this to say on the subject: "Peaceful coexistence is meant to signify a democratic and just peace in the interest of all peoples which guarantees their survival, their security, their social progress and their mutual cooperation."<sup>25</sup> Other GDR authors go on the assumption that this will be a period "of apparently long duration."<sup>26</sup> It is quite amazing to see how they characterize the "cold war" in one instance as a "form of imperialist policy" and in another as a "concrete-historical form of the political relations between socialism and imperialism."<sup>27</sup> In a sense, as the following quote shows, the "cold warriors" who have often been and still are attacked are rehabilitated: "The phase of the cold war as one element of the contrasting imperialist and socialist policies was a necessary and progressive stage in the historical development process of peaceful coexistence. It was the first real manifestation of an--albeit still endangered but up until today--uninterrupted era of peaceful coexistence."<sup>28</sup>

No less revealing is the assessment of the relationship between peaceful coexistence and the new military doctrine. "As long as the opposing social systems confront each other fully armed, the policy of peaceful coexistence assumes a military-political role, in the absence of which it cannot be attained."<sup>29</sup> The language used here is almost identical to that of the Soviet model, i.e. Prof Shakhnazarov has this to say about the rules governing the relations between the nuclear powers: "In all, they constitute a kind of code of political behavior in the nuclear age. Adherence to this code is not a matter of one's likes or dislikes or of free choice. What is at stake is the only way of thinking and acting which will help prevent nuclear catastrophe."<sup>30</sup>

And this is the way the peace philosophers of the GDR put it: "Peaceful coexistence does not do away with the antagonistic disputes between socialism and capitalism but it does create a framework within which they can be situated...Because of the very incompatibility of the opposing social systems of socialism and imperialism, peaceful coexistence

provides the only possible life-affirming, sensible and human locale in which this inevitable struggle can be fought out. It has become an historical necessity of our age." In view of this assessment of the central political concept applying to this present time, it is probably worthwhile to recall a statement on the same subject made in 1970. At that time, this is the language used to describe the "struggle for peaceful coexistence and the mission of socialist military power:" "The basic precepts of the policy of peaceful coexistence presuppose that its implementation objectively calls for the existence of a superior military potential of the socialist states--in addition to the fulfillment of other political conditions."<sup>31</sup> In retrospect, this call for military superiority is particularly notable. After all, as we demonstrated above, the East Bloc has since made the need for parity and balance into one of the focal points of its military policy.

In the publications we have quoted from so far the peace concept is dealt with at some length under the aspect of the new military doctrine which focuses on war to a somewhat greater extent. In this context, the GDR peace researchers run into a bit of trouble, since Marxist-Leninist theory calls elimination of the capitalist social system as a result of the revolutionary struggle of the working class the most important condition for permanent peace. By contrast, the new version reads as follows: "World peace is based on peaceful coexistence of nations with different social systems. Under no circumstances does it predicate the elimination of antagonistic class structures, i.e. the downfall of capitalist nations."<sup>32</sup> A more complete turnabout can hardly be imagined. The revolutionary role and mission of the working class is quite simply eliminated! The following language used by the same authors offers further proof of this: "In view of the foreseeable consequences of a nuclear war, another important lesson to be drawn is that it cannot be transformed into a revolution." At this point, the adoption of Prof Shakhnazarov's ideas is quite evident.

The role assigned to the working class now is but a pale reflection of its former one. Now, it is to serve as "the primary international force in the fight to prevent nuclear war." For another thing, it is enjoined "to work even more effectively for peace" in the non-socialist countries. It almost sounds like an abrogation of the class struggle concept, e.g.: "Nonetheless, as far as averting the threat of nuclear war and preserving world peace are concerned, these are not specific class interests of the working class or specific national interests of the nations of the socialist community. The fact is that the struggle for world peace today involves the defense of present and future conditions of the existence of all classes and levels of society, of all nations, of mankind as such."

In this instance, too, it seems worthwhile to go back to a publication of another day. A 1972 pamphlet, written by two NVA officers and entitled "The Armed Forces and the Class Struggle of Our Time"<sup>33</sup>, contains the following passage: "Under the leadership of the working class, the working people of all nations will destroy the bourgeois exploitation system and its armed forces and tear out the social system which has spawned such instruments of violence by the roots." It is perhaps worth noting that the year 1972 was part of the nuclear age, too.

In order not to gloss over the differences between socialism and capitalism too much various categories of the peace concept are developed; with an effort being made to assign class character to peace. "The point is to analyze each concrete-historical state of peace thoroughly so as to determine whether one is dealing with a rapacious, reactionary and unjust peace or with a democratic, progressive and just one."<sup>34</sup>

The definition of peace as an absence of war is rejected as being insufficient, since this concept tends "to obfuscate the concrete-historical nature of peace." The peace philosophers, for their part, use the following definition as their point of departure. "Peace now is a political condition of society which possesses an entirely concrete class and political content in each instance."<sup>35</sup> It is only the Marxist-Leninist idea of peace which can apply in that it takes existing socio-economic conditions into consideration as a decisive factor. Accordingly, there are three different kinds of peace:

- the peace of the classless primal society;
- the peace of antagonistic society;
- the peace of the communist social system.

In the case of the second kind of peace, a distinction is made between democratic and just peace and undemocratic and unjust peace. It is worth noting that democratic and just peace is characterized as "a relatively rare state of affairs" in an antagonistic class society. In this view, it is only partially possible during periods of transition between the various forms of exploiter societies.

Following these general observations, the authors of "The Philosophy of Peace" turn to a special segment on "World Peace and the Types of Peace in Our Time." This special subject was included as a response to the new military doctrine. This clearly is reflected in the following statement: "Complete elaboration of a Marxist-Leninist classification of states of peace according to sociopolitical types has just begun." And this is what they have to say on the subject in 1984! Existing uncertainties are also attested to by the admission that "there still remain a number of unresolved contributions to the debate" despite the fact that they were based on Marxist-Leninist theory.

The varieties of peace in the relations among the socialist states are of virtually no significance in this context even if they are characterized as the "historically highest type" of peace. We are more concerned with dealing with "peace in an antagonistic society." Here, peaceful coexistence inevitably plays a major role once again. "Peaceful coexistence creates just, democratic and peaceful international relations between socialism and imperialism, peaceful conditions of movement for antagonistic contradictions between the two social systems and thereby favorable conditions for democratic and just peace among all the nations of the world." In this instance, the parallel to the positive role assigned to peaceful coexistence within the new military doctrine comes out quite clearly.

Still, even peace must have its enemy image so that the East-West relationship does not appear to be too harmonious and peaceable. Above all, the differences between the two positions are not to be glossed over entirely. The "U.S. war ideologues," for example, are accused of trying to establish an "imperialist world peace" and of announcing an "anti-communist sense of mission" within the context of their plans for a "pax americana." The names of 12 personalities from the FRG alone are listed as being beholden to this doctrine.<sup>36</sup> "Peace in freedom" and "peace in dignity and freedom" are characterized as smoke screens for the quest to attain an "imperialistic, enforced peace based on strategic superiority." This is not the place to point out the differences between NATO and the Warsaw Pact in the field of ideology or Realpolitik; but as far as the peace issue is concerned, it must be admitted that much the same vocabulary is being used in reverse by the West.

Let me cite two more examples to demonstrate how much attention is being paid to this issue in the GDR in the aftermath of the Shakhnazarov piece. At a meeting of the "expanded presidium" of the GDR Historical Society on 2 May 1984 "the mission of the historian in the fight for peace" was discussed.<sup>37</sup> One of the participants called the "present situation one of radical novelty and contrariety" and then added the following observation which gives an indication of the uncertainties with regard to the position and the mission of the historian: "The new and historically unprecedented possibility that mankind might annihilate itself forces us to reevaluate history in its entirety...A shift in outlook occasioned by the present" is in order for today's historian. "In doing so," (and the following caveat is worth noting) "he must recognize and avoid the dangers of a subjectivist, moralistic and ahistorical approach." To justify the new "outlook," the speaker referred to G V Chicherin, the Soviet people's commissar for foreign affairs, who said in a speech in 1920: "Reality itself has demonstrated to us and to other nations the necessity to establish permanent relations between the workers and peasants government and the capitalist governments." The May 1984 conference called for "substantial intensification of research into the history of non-socialist forces of peace." This research should not only go into shortcomings and inadequacies as opposed to

socialist peace efforts but should more importantly give proper attention "to the achievements...on the side of the struggle for human progress." The following sentence, as much as any, is typical for the GDR historian's future mission, i.e. "he is faced with the problem of a good many re-evaluations."

Constitutional and international law experts also met in East Berlin for a "colloquium on the legal aspects of the peace issue" on 3 October 1984.<sup>38</sup> The meeting was sponsored by the institute for state and legal theory of the GDR Academy of Sciences. Prof Dr H Klenner, a member of the academy, complained that the learned journals had thus far not paid enough attention to the fact that "the peace issue today has assumed a qualitatively new role in the class struggle." This was followed by a lively discussion among the participants on the "social determinism and the dynamic nature of the peace concept." The [peace] categories worked out by the legal experts corresponded to the abovementioned three-part scheme. It is worth noting that two contrary approaches to the relationship between peace and social progress and revolution were developed at this meeting. To counter the argument that the world would have to be preserved in order to be changed, the view was put forward that peace could "not be preserved without additional change in the world." The minutes of this meeting, too, make it plain that the peace issue is currently being discussed solely against the background of the shift in military doctrine. At any rate, the constitutional and international law experts follow the lead of the other groups in placing a question mark after the expressly cited dictum of Clausewitz that "war is the extension of politics by other means."<sup>39</sup> Their answer to the question was "that in view of the threat of nuclear war which would annihilate mankind war under the present circumstances could no longer be said to have any political function whatsoever." By making this statement, the GDR legal experts turn thumbs down--though not in so many words--on the question of whether one may still speak of "just wars" in the Marxist-Leninist sense in this day and age.

In all, we may now draw the conclusion from our discussion of the second aspect of our general subject that as far as socialism of the communist variety is concerned the focus both in theory and in the debate on war and peace has shifted in the direction of the peace concept itself. This has been a necessary consequence of the fact that the doctrine of just and unjust wars has been discarded because it is viewed as being inappropriate to the nuclear age.

#### Concluding Remarks

This article attempts to describe the most recent changes in communist military doctrine and to point out that these are changes of a fundamental nature.



In trying to provide a brief analysis, one cannot simply gloss over experiences in the East-West relationship. On the other hand, this must not cloud our view to such an extent that we dismiss the new theory as propaganda pure and simple. Thus far, to be sure, there have only been some verbal announcements and even these are limited to the possibility of nuclear war. In terms of content, however, one is able to make out a far-reaching approximation of Western conceptions. This fact alone assumes political significance. Some of the official or semi-official statements of the past are no longer imaginable given these altered circumstances. This would include, for example, the following sentence contained in a report of the NATO military committee dated 15 May 1979: "Soviet military doctrine calls for the ability to fight, survive and win a nuclear war."<sup>40</sup> On the other hand, even someone like GEN Hoffmann would think twice about repeating a statement he made in a speech on 1 December 1975: "Up to now, there has in fact been no instant in history where a socialist revolution emerged victorious without the cannons having spoken the final word or without their at least being aimed and loaded."<sup>41</sup>

Still, it would be inappropriate to deduce, on the basis of the identical language, that extravagant or high-flying expectations are in order, e.g. real improvement in the chances for disarmament. Particularly in dealing with the Soviet Union and other East Bloc nations, it has all too frequently turned out that the same words do not signify agreement on content. The problems in the everyday world of military policy already begin to emerge with regard to the differences in interpreting the concepts of security and balance. For another thing, there is the latent mutual distrust. The figures on military potential and weapons systems supplied by the other side are always put in question.

But even when these aspects and problems are taken into account, we are still left with the difficult question as to what the origins and reasons for the major changes in communist military doctrine are. After all, a crucial element of Marxist-Leninist war and peace theory, valid until now, is being discarded or at least being put on ice. Even if this move be interpreted as a tactical and therefore temporary maneuver, it does represent a profound break with ideological traditions. A renewed about-face is hardly conceivable in the foreseeable future. Even domestically, it would play total havoc with the credibility of the military theoreticians, who seem unsure of themselves as it is.

The question of whether this amounts to a fundamental and thus long-term change of direction or merely to a temporary, inevitable adjustment to the realities of the present is impossible to resolve. For all that, even the perception that it is "perhaps...only a withdrawal from positions which have become untenable"<sup>42</sup> would provide enough of a basis for a new way of talking about war and peace in the nuclear age. This in itself could turn out to be one of the oft-quoted "small steps" toward an improvement in East-West relations.

# FOOTNOTES

1. Military Lexicon of the GDR, 2d edition, East Berlin, 1973. The definition contained in "Kleines politisches Woerterbuch" [Small Political Lexicon], 3d edition, East Berlin, 1973 is almost identical.
2. COL GEN Dr Savyalov, "Der Verteidigungscharakter der sowjetischen Militaerdoktrin" [The Defensive Character of Soviet Military Doctrine], MILITAERWESSEN, No 9, 1981, p 3ff.
3. Guenther Wagenlehner, "Militaerische Ueberlegenheit, Krieg und Gewaltanwendung in der Auffassung der sowjetischen Fuehrung" [Military Superiority, War and the Use of Force As Seen by the Soviet Leadership], BEITRAEGE ZUR KONFLIKTFORSCHUNG [Annals of Conflict Research], No 4, 1981, p 5ff.
4. Erich Honecker, "Zuverlaessiger Schutz des Sozialismus--Ausgewahlte Reden und Schriften zur Militaerpolitik" [The Reliable Protection of Socialism--Selected Addresses and Writings on Military Policy], East Berlin, 1972, p 223.
5. Erich Honecker, "Reden und Aufsaeitze" [Speeches and Writings], Vol 4, p 321.
6. Cited in Bulletin of FRG Press and Information Office, 9 May 78, p 429.
7. Cited in EUROPA-ARCHIV, No 21, 1979, p 558.
8. Max Schmidt, "Militaerstrategisches Gleichgewicht, politische und militaerische Entspannung" [Military-Strategic Balance, Political and Military Relaxation of Tensions], LPW BERICHTEN, No 9, 1980, p 1ff.
9. The author is Prof Dr Gerhard Powik, in MILITAERWESSEN [Military Affairs], No 1, 1984, p 12ff.
10. Cf 1975 statement cited by Kuppe in DEUTSCHLAND-ARCHIV, No 1, 1985 and by Loeser in DEUTSCHLAND-ARCHIV, No 9, 1985.
11. Cited in VOLKSARBEIT, No 6, 1984, p 2.
12. Author's name is COL Dr A. Loose, MILITAERWESSEN, No 9, 1984, p 15ff

13. NEUES DEUTSCHLAND, 22 June 84.
14. "Abruestung--Ideal des Sozialismus" [Disarmament--A Socialist Ideal], Moscow, 1933, p 30.
15. NEUES DEUTSCHLAND, 23/24 March 85.
16. NEUES DEUTSCHLAND, 23 November 84.
17. VOLKSARBEIT, special supplement to No 26, 1935.
18. VOLKSARBEIT, No 7, 1934, p 3.
19. DEUTSCHLAND-ARCHIV, No 1, 1935, p 35.
20. Gottfried Kiessling is identified as one of the authors. Kuppe cites him as a proponent of the previous doctrine.
21. "Die Philosophie des Friedens im Kampf gegen die Ideologie des Krieges" [The Philosophy of Peace in the Fight Against the Ideology of War], East Berlin, 1934, p 52f.
22. Ibid., p 75.
23. German translation in SOVIETWISSENSCHAFT, GESELLSCHAFTSWISSENSCHAFTLICHE BEITRÄGE [Soviet Science, Contributions to Sociology], No 5, 1934, pp 451-461.
24. Dr. Loose, "Werte des Sozialismus und Verteidigungsbereitschaft" [Socialist Values and Defense Readiness], MILITÄRWESSEN, No 9, 1934, p 15ff.
25. "Die Philosophie..." op. cit., p 135.
26. E.g. Heinz Bonk, Klaus Franke, Werner Pfaff, "Friedenssicherung und Abruestung--zentrale Fragen des Kampfes im staatsmonopolistischen Kapitalismus" [The Preservation of Peace and Disarmament--Central Issues in the Struggle in State Monopoly Capitalism], published by the SED central committee academy of social science's institute for imperialism research, East Berlin, 1934, p 203.
27. "Die Philosophie..." op. cit., p 139.
28. Ibid., p 139.
29. Ibid., p 151.

30. Shakhmazarov article cited in footnote 23 above, p 462.
31. Author's name is LT COL P. Wollina, MILITAERWESSEN, No 8, 1970, p 1213.
32. Bonk et al, op. cit., p 164.
33. Authors' names are Wolfgang Mueller and Rudolf Oelschlaegel, East Berlin, 1972.
34. "Die Philosophie..." op. cit., p 108.
35. Ibid., p 113.
36. Ibid., p 98f. Among those named are Helmut Diwald, Baron von der Heydte, Klaus Hornung, Count Huyn, Gerd-Klaus Kaltenbrunner, Heinz Karst, Jochen Loeser and Otto Mischke.
37. ZEITSCHRIFT FUER GESCHICHTSWISSENSCHAFT [Journal of Historiography], No 12, 1984, pp 1092-1101.
38. Summary report in NEUE JUSTIZ [New Justice], No 12, 1984, p 499f.
39. The Clausewitz quote reads as follows: "war is nothing but the continuation of political affairs with the admixture of other means." Carl von Clausewitz, "Vom Kriege" [On War], 18th edition, Bonn, 1972, Book 2, Ch 6: "Der Krieg ist ein Instrument der Politik" [War Is an Instrument of Policy], p 990.
40. Cited in a publication of the FRG Press and Information Service, June 1979.
41. EINHEIT, No 2, 1976.
42. Heinz Albert Huthmacher, DDR REPORT, No 8, 1985, p 439.

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POLITICS

GERMAN DEMOCRATIC REPUBLIC

AGRICULTURAL COOPERATION REGULATION ASSESSED

East Berlin NEUE JUSTIZ in German Vol 39 No 12, Dec 85 pp 502-504

[Article by Prof Dr Richard Haenert, of the Jurisprudence Department of the Karl Marx University in Leipzig, and Prof Dr Erich Krauss, of the Agricultural Production Cooperatives College in Meissen: "Model Cooperation Agreement for Cooperative and Nationally Owned Farms"]

[Text] Some 1,100 crop production LPG's and roughly 2,800 livestock production LPG's are currently operating in the GDR, alongside 140 crop production VEG's and 320 livestock production VEG's. They are able to accomplish their tasks only if they enter into varied and stable cooperation relations with other enterprises of agriculture and the foodstuffs industry. Cooperation is an objective precondition for comprehensively and permanently intensify output by the speeded-up application of science and technology consonant with the status of the division of labor and specialization.

The consolidation of the LPG's and VEG's as well as the all-round development of their cooperation relations are increasingly merging into a standardized process. A key issue in this respect is the deepening of cooperation between crop production LPG's and VEG's on the one hand and livestock production LPG's and VEG's on the other. This responds to the demands of the natural circulation soil-crop-livestock-soil and helps to rationally organize the standardized reproduction process in terms of the division of labor.

As the SED Program emphasizes, the deepening of cooperation relations is an essential feature of the farm policy pursued by the party of the working class.(1) SED resolutions have repeatedly stressed that, for a long time to come, LPG and VEG cooperation will be the most suitable and sole acceptable approach to the full development of the potentials of cooperative property and thus create favorable conditions for the comprehensive intensification of agriculture.(2)

An exact legal regulation is needed to organize reciprocal interenterprise relations on a stable basis. LPG's and VEG's have long used cooperation agreements for that purpose. This custom was made the foundation of the 1982 LPG law. In Article 16, this regulates the cooperation agreement as one of the most important legal tools for the organization of cooperation relations.

## The Basic Concern and Legal Nature of the Model Cooperation Agreement

The Model Cooperation Agreement for LPG and VEG Cooperation--Appendix to the Announcement of 12 June 1985 (GBI I No 17 p 207), confirmed by the GDR Council of Ministers now generalizes the experiences gained in the use of such agreements. The model cooperation agreement (hereinafter MKV) is of the nature of a government recommendation in the meaning of Article 7 Paragraph 3 LPG Law. As a legal norm, it represents an important source of agricultural and LPG laws.

Each LPG and VEG is obligated to use the MKV for organizing the realization of the measures recommended therein in accordance with the specific circumstances of the respective cooperation and for the management organs of the LPG's and VEG's to arrive at the necessary decisions. The cooperation agreement of the respective LPG/VEG cooperation must precisely define the objectives of this cooperative cooperation, the rights and duties of the cooperation partners relating to the deepening of their cooperation relations as well as the status, tasks, powers and working methods of the cooperation council (the elected democratic organ of the cooperation partners for the joint management, planning, organization and accounting of the cooperation) and the chairman of the cooperation council.

The MKV includes detailed recommendations how to organize the joint operation of the partners' (LPG's and VEG's) cooperation so as to safeguard the standardized and specialized reproduction process of crop and livestock output in the region. One of the basic intentions of the legal regulation is that of requiring the cooperation partners so to accomplish jointly (as linked enterprises) such tasks which a single LPG or VEG is no longer able to handle on its own. It will therefore be necessary to raise such tasks to the level of cooperation as exceed the potentials of the individual cooperation partner.

The cooperation agreement, decided by the general meetings of the LPG's and the management organs of the other cooperation partners, and confirmed by the kreis council or the superordinated managements of the VEG's involved, is binding on all cooperation partners.

## The Legal Status of LPG's and VEG's in the Cooperation

Cooperation relations are marked by the fact that LPG's and VEG's are and will remain the basic units of farm production. It is therefore necessary for them to retain their legal independence and economic self-responsibility. This principle, rooted in Article 11 LPG Law for all forms of cooperation relations, is decisive for understanding LPG-VEG cooperation and for its ongoing development. It reflects the economic and social function of the LPG as a socialist production cooperative (legally established in the LPG Law). which is an inherent element of the socialist national economy (Article 4 LPG Law) and, as the social organization of the class of cooperative farmers, an "indivisible element of the developed socialist society" (Article 3 LPG Law). The same applies mutatis mutandi to the VEG's, as per Articles 31 and 41 of the Combine Decree.

The retention of the legal and economic independence and self-responsibility of LPG's in the cooperation arises from the necessity of maintaining the functional capacity of the LPG as a cooperative with political, economic, social and intellectual-cultural tasks and thereby to comprehensively bring to bear the potentials of cooperative property and the cooperative form of organization of farmers. LPG independence in the organization of its cooperation relations is made visible in economic and legal terms by the fact that each LPG (and also each VEG) within the cooperation has its own enterprise plan and is responsible to society for its fulfillment; that it achieves its own operating results, holds and uses its own cooperative funds and, within the framework of the law, disposes of them at its own discretion; that it organizes its own payment system for the cooperative labor of its members, and that it continues to conclude the business contracts and other legal business necessary for its operations.(3)

The retention of the LPG's legal and economic independence in the cooperation also means that the LPG's management system (established in the LPG model statutes) is not affected by the cooperation. The general meeting as the supreme organ of the LPG continues to have exclusive competence (Article 5 LPG Law; No 161 LPG Model Statute).

The MKV entirely takes account of these premises linked to the guarantee of the LPG's function in the further organization of the developed socialist society. These same premises therefore also characterize the tasks, detailed rights and duties of LPG's and VEG's in the organization of their reciprocal relations.

The MKV describes the cooperation council as the cooperation partners' elected democratic organ for the joint management, planning, organization and accounting of LPG/VEG cooperation, as a dynamically developing economic organism (Section III No 1). It must carry out the tasks assigned it by the general meetings of the LPG's, the directors of the VEG's and meetings of the authorized agents of the cooperative facilities for the exercise of its economy managing functions for the benefit and profit of the standardized reproduction process of the cooperating LPG's and VEG's in general, each cooperation partner in particular and the national economy (see Section III No 1).

The cooperation of LPG's and VEG's (as a cooperative organization) may be defined as the legally regulated collaboration of cooperation partners in a particular region, designed jointly and by the evolution of a common management organ with economy managing function and with the cooperation partners' retention of legal independence and economic self-responsibility to realize the efficient production of crops and livestock products in the standardized agricultural reproduction process and improve the working and living conditions of cooperative farmers and employed workers.(4)

In the past we have come to acknowledge that it is not possible to organize the many interrelations involved in handling the natural circulation soil-crops-livestock-soil exclusively by business contracts between LPG's and VEG's. Experience has taught us that the establishment of cooperations and

the work of their cooperation councils is indispensable also whenever LPG's and VEG's collaborate in an agricultural-industrial association.

The necessity of establishing a cooperation council as an organ with economy managing functions arises not only from the fact that cooperation is ipso facto an economic organism but also (and quite particularly) from the variety and the nature of the social relationship to be jointly organized by the cooperation partners. In addition to the economic relations between the LPG's and VEG's (such as supplies of feed and organic manure, the establishment and use of common funds, the rational use of the labor capacity), these also involve internal enterprise development and the development of working and living conditions. The MKV takes this into account by directing the cooperation partners in the cooperation council to discuss and coordinate the measures proposed by the various LPG's for the organization of the system of remuneration, the distribution of payment in kind and individual land use as well as for assistance for farmers' private holdings (see Section III No 7).

#### Assignment of Powers to the Cooperation Council

The MKV's identification of the cooperation council demonstrates that the assignment of powers to the cooperation council for the purpose of carrying out economy managing functions proceeds strictly in accordance with cooperative legal principles. To be specially emphasized in this connection are the following aspects:

1. The MKV starts from the assumption that the assignment of economy managing functions to the cooperation council will proceed by the adoption of a decision by the cooperation partners in the result of the ongoing development of production conditions or production organization, in other words from the "inside." The assignment of planning powers to the cooperation council (see Section III No 5) must also be viewed from this aspect. Essentially there is no transfer of state powers from the "outside." The functions of the cooperation council are mainly of a management nature.(5) The cooperation council is the organ by means of which the LPG's and VEG's jointly carry out their responsibilities for crop and livestock production. Consequently it is not an intermediate management organ ranking above the LPG's and, therefore, LPG general meetings and executive boards.

2. The various tasks and powers to be transferred to the cooperation councils will depend on the actual standard of development in the cooperations. This responds to Lenin's principles of the variety of forms and the gradual advance of the socialist transformation of farming.(6) The nature of the MKV as a recommending legal standard is reflected especially in the provisions regarding the tasks and powers the cooperation partners may assign the cooperation councils (see, for instance, Section II No 2).

3. The MKV provides that the cooperation partners are alone competent to decide the powers, rights and duties to be assigned the cooperation council. It follows that the cooperation council is not entitled to assume particular powers by its own decision.



## The Legal Regulation of Decisionmaking

The regulation of decisionmaking in the cooperation council is crucial for the determination of its legal status and mode of operations. Applying Article 12 Paragraph 2 LPG Law, the MKV provides that the cooperation council adopts its decisions unanimously, following collective discussion (see Section III No 4). This provision has long been tried and tested in life. It responds to the principles of cooperative democracy and, in particular, safeguards the legal independence of the cooperation partners. By comparison with the LPG Law, the MKV includes the more precise provision that each partner enterprise has one vote in the cooperation council. As each cooperation partner is represented by several authorized delegates in the cooperation council, unanimity therefore does not mean that every authorized delegate to the cooperation council must approve a proposal for the decision to be adopted with legal force.

Purposeful preparation of cooperation council decisions by the management organs of the partner enterprises, especially the LPG executive boards, will best guarantee that the authorized delegates of a cooperation partner champion the same views at meetings of the cooperation council, thereby providing a basis for unanimous decisionmaking (for example relating to the use of common funds, agreed prices, delivery and performance terms and other important issues). From the juridical standpoint it is of course sufficient for the majority of the authorized delegates of each cooperation partner to approve the proposed decision. For practical purposes, a decision is considered unanimous if the authorized delegates of the partner enterprises present at the meeting have approved it, and if the partner enterprise whose authorized delegates did not attend the cooperation council meeting gives post facto approval to the decision within a certain time limit. Decisions not adopted unanimously have no legal force, nor have any adopted by the cooperation council outside the competence assigned it by the partner enterprises.

Indispensable for the preparation of factual proposals in the cooperation council is the work of committees and study groups of that council, representing the democratic involvement of cooperative farmers and workers. The MKV includes the relevant provisions (Section III No 10).

## The Legal Effect of Decisions

The decisions of the cooperation council may have either a mandatory or commendatory effect for the cooperation partners.

Mandatory decisions are required mainly in matters affecting more than an individual LPG, for example the implementation of common management and planning measures for the uniform reproduction process in the cooperation (Article 12 Paragraph 3 LPG Law). The mandatory effect of cooperation council decisions on the LPG's and VEG's is a qualitatively new step in the observance of the cooperation partners' common responsibility for the uniform reproduction process of crop and livestock production. It is legally based on the fact that, in accordance with the provisions of the cooperation

agreement, the authorized delegates of the LPG's and VEG's in the cooperation council have been assigned decisionmaking powers by their enterprises.

Cooperation council recommendations legally obligate the LPG's and VEG's to properly examine them and arrive at decisions by the competent management organs consonant with concrete enterprise circumstances.

#### Planning and Other Fields of Action

The economy managing function of the cooperation council is especially reflected in its task, starting from state plan targets and the long-range development conception of the cooperation, to draft the plan of the cooperation of LPG's and VEG's as the decisive management document for their cooperation in the uniform reproduction process of crop and livestock production. The cooperation council sets the tasks for the partner enterprises on the basis of government indices. The latter draft their enterprise plans accordingly. LPG's and other enterprises defend their enterprise plan in the cooperation council which, in turn, defends the plan of the cooperation (the content of which agrees with the enterprise plans) at the kreis council. Consonant with the legal independence and economic self-responsibility of the LPG's, the kreis council confirms the plans of both the cooperation and the LPG's (Article 47 Paragraph 3 GoeV; No 3 Paragraph 2 LPG model statute; No 9 Paragraph 2 LPG Model Factory Regulations).

As per the MKV regulations, other important fields of action for the cooperation council (always on the basis of the respective decisions by the partner enterprises) are:

- The formation and use of common material and financial funds (investment fund, reserve fund, fund for stimulating performance). The amount of the allocations and their use is included in the enterprise plans or the plan of cooperation;
- The drafting of supply and performance terms for fodder and organic manure;
- The principles of mutual aid, whether in terms of manpower, machines or other capital equipment;
- The drafting of principles for settling the accounts of economic relations;
- Decisionmaking with regard to agreed prices;
- The coordination of measures in the partner enterprises with regard to remuneration, farmers' private holdings, assistance for private home construction, looking after pensioners, and so on.

Cooperation agreements often assign powers to the cooperation council for deciding cases of litigation arising among cooperation partners from business contracts (for example as the result of deliveries of poor quality fodder).

Such a procedure responds to the requirement to settle disputes by way of self-responsibility, though the basic competence of the State Contract Court (Article 22 Constitution) is not canceled thereby.

A particularly important field of activity for the cooperation council is the promotion of the partner enterprises' cooperation with the local people's representations and their organs as well as with the social forces in the region.(7) It needs to affect, for example, the conclusion of LPG and VEG local contracts with the village councils (Articles 4 , 61, 62, 70 GoeV).

#### The Tasks and Powers of the Cooperation Council Chairman

In generalization of practical experiences, the MKV comprehensively settles the powers and tasks of the cooperation council chairman (Section IV). It calls for the election as chairman of the cooperation council the politically and professionally most experienced chairman of a LPG or director of a VEG with the most stable production bases.

The efficiency of the cooperation council's work largely depends on the ability of the cooperation council chairman to organize it on the basis of the cooperation agreement, the work regulation and the work plan. The MKV directs attention in particular on the following key demands on the chairman's work:

1. In cooperation with the chairmen of the LPG's and the directors of the VEG's, he organizes the purposeful and planned work of the cooperation council. He assigns tasks to the committees and study groups as well as to individual members of the cooperation council.
2. For the purpose of the accomplishment of his tasks, especially the management of plan implementation, he regularly conducts management meetings with the chairmen of the LPG's and managers of the other partner enterprises.
3. For the purpose of accomplishing key tasks, he is entitled to establish temporary activist or study groups and, in coordination with the chairmen of the LPG's and the managers of the other partner enterprises, involve management cadres and specialists of the cooperation partners in the preparation of decisions. He informs the kreis council about the dates of the meetings and the respective agenda so as to enable the kreis council in direct collaboration to help the cooperation council to efficiently organize the uniform agricultural reproduction process.
4. He is empowered by the partner enterprises together with the management cadres and administrative personnel of his LPG or VEG to work on the tasks set the cooperation. The partners are to arrive at agreements on the shares of the costs arising to be charged the partner enterprises.
5. The partner enterprises are authorized to empower the chairman of the cooperation council with his LPG or VEG to legally represent the cooperation within the framework of the tasks assigned the cooperation council,(8) for example if an LPG acts as the chief enterprise in the preparation and

realization of a common investment, or if, on behalf of the cooperating partners, one LPG operates the bank accounts for common financial funds.

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The MKV is an important tool for the LPG's and VEG's. The orientation provided by the MKV enables all LPG's and VEG's to organize their cooperation in accordance with the experiences of the most advanced cooperations.

#### FOOTNOTES

1. See "Programm der SED" [SED Program], Berlin 1976, p 31.
2. See, for example, E. Honecker, "Bericht des Zentralkomitees der SED an den X. Parteitag der SED" [SED CC Report to the Tenth SED Congress], Berlin 1981, pp 75f; E. Honecker, "Aus dem Bericht des Politburos an die 9. Tagung des Zentralkomitees der SED" [From the Politburo Report to the Ninth SED CC Plenum], Berlin 1984, pp 48ff; E. Honecker, "Zur Vorbereitung des XI. Parteitages der SED (Aus der Rede auf der 10. Tagung des Zentralkomitees der SED" [On the Preparations for the Eleventh SED Congress (Excerpt from the Speech at the Tenth SED CC Plenum)], Berlin 1985, pp 40ff.
3. This legal organization of the LPG's status in the cooperation counters opinions which claim that the cooperation of LPG's (and VEG's) will, after a short transitional period, lead to the merger into a large-scale LPG with both crop and livestock production. Such views are without foundation, and this arises from the fact that VEG's collaborate in many cooperations, and that they of course operate on the basis of nationally owned socialist property.
4. On the concept of cooperation see "LPG-Recht. Lehrbuch" [LPG Law. Textbook], Berlin 1984, p 154; R. Haehnert, "LPG Law and the Legal Regulation of Cooperation Relations Between LPG's and Their Partners," STAAT UND RECHT 1983, No 6, pp 450ff.
5. J. Hermann, "Aus dem Bericht des Politburos an die 10. Tagung des Zentralkomitees der SED" [From the Politburo Report to the Tenth SED CC Plenum], Berlin 1985, p 101.
6. See V.I. Lenin, "Original Draft of the Theses on the Farm Question," in Collected Works, Vol 31, Berlin 1966, pp 140ff.
7. See R. Steding, "Promotion of LPG and VEG Cooperation Relations-- Important Task for the Local Government Organs (On the New Law on the Local People's Representations in the GDR)," KOOPERATION 1985, No 10, pp 448ff.
8. The cooperation is an economic organization without the status of a legal entity.

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POLITICS

POLAND

INTELLIGENTSIA'S ROLE DISCUSSED, CRITIQUES GIVEN

Role of Intelligentsia Examined

Warsaw RZECZPOSPOLITA in Polish 23-24 Nov 85 p 4

[Article by M. Miecznikowska: "Role and Tasks of the Intelligentsia"]

[Text] Not long ago, there was a wave of discussion in the press on the subject of the intelligentsia, the role it has played thus far in the history of Poland and the tasks it ought to perform under the new social and institutional conditions. These are not easy tasks. In many instances, the opinions rendered were determined by the ideological orientation of the discussants, by their values systems and by the related way in which they perceive our national past.

This subject matter in its historical aspect is dealt with by the Polish Academy of Sciences Institute of History, and in particular by the Research Center for the Social History of 19th and 20th Century Poland, directed by Prof J. Zarnowski. It is subject matter that sparks international interest as well. For example, these topics were the subject of a paper presented by Professor Zarnowski at the recent World Congress of Historians in Stuttgart, where it was considered whether the intelligentsia was a bridge between the mass and elitist culture or a barrier. Comparative studies of three Slavic countries in the 19th century--Poland, Czechoslovakia and Russia--show that wherever the national liberation movement was in motion and the intelligentsia sought massive support for the realization of its political and social goals, its educational and culture-formative role on the scale of the entire nation was considerably greater than in the other countries. The figure of Promyk is a very symbolic example of this. He both taught the peasants to read and write in Polish and propagated ideas of national identity.

The situation was entirely different in tsarist Russia, where the intelligentsia was closed up in aristocratic salons and had no significant impact on the state of mind of broad social circles.

In our own times, times in which cultural advancement is easier, the intelligentsia has become a part of the audience of mass culture. Its spiritual nourishment does not differ significantly from the needs of other social groups in this sphere, despite the difference in formal status.

The notion of the intelligentsia not only as a certain occupational stratum but also as a group that either claims it has a certain mission to perform or really does have this mission has become obsolete. Its function is performed at present primarily by the intellectual community.

The Institute of History is doing similar research on the other large groups that make up the 19th century and contemporary social structure of our country. A book written by Prof R. Kolodziejczyk on the figure of August Bloch, the financier, is one result of the analysis of the role and position of the Polish bourgeoisie in the 19th century. Bloch was nearly prophetic in anticipating certain problems in his work on war. Through the present day, this work is well known to theoreticians of military science all over the world.

The postwar period, until now treated somewhat with neglect by historians, seems to be a fascinating period for research on social structures. The PAN Institute of History plans to take up these questions in the near future. The creation of a special organizational unit is anticipated to deal exclusively with the study of contemporary history in the aspect of the structural changes in Polish society during the past 40 years.

#### Narrowmindedness Criticized

Warsaw ZYCIE WARSZAWY in Polish 16-17 Nov 85 p 8

[Reprint from POLITYKA by KTT under the "In the Weeklies" rubric: "Cock or Capon"]

[Text] KTT writes in POLITYKA:

"As far as it can be determined, during the coming period, the authorities plan to occupy themselves with a multitude of practical and very useful routine matters, and it is high time that they did so. We must realize, however, that many intellectuals, when they hear pragmatic, emergency, practical answers, may even be pleased with them as average consumers, but they will not be satisfied with them as intellectuals, i.e., as people that wish to have the awareness of participating in the process known as history. I think that this is the major problem with dialogue, and sometimes the lack of dialogue, with this class, stemming frequently from the lack of preparation of such dialogue and the lack of more substantive results.

A second important element in the thinking of intellectuals is their almost organic inability to be reconciled with the lack of intellectual alternatives, with dogmatism. All progress in human thought, the sphere of activity of intellectuals, is based on the continual questioning of once-accepted statements, on the search for other solutions and propositions. Without this, intellectual progress dies and the intellectual that has assumed such a role becomes--I do not know--a preacher, a lecturer or a mere clerk (...)

The whole difficulty with intellectuals is based on the fact that it is possible to have them on one's side only when they are accepted for what they really are--open to intellectual talk and quite indifferent to matters that

lie outside this realm; willing to think and departing when the red light flashes in front of thought.

All attempts, however, to tailor their nature and to breed intellectuals that are devoid of these annoying qualities may yield the sort of result one would get by changing a cock into a capon (if you will excuse the expression). A capon is larger, fatter and often tastier to the consumer than a cock. The only hitch is that it is totally infertile."

### Intellectuals' Role in European Society

Warsaw ZYCIE WARSZAWY in Polish 26 Nov 85 p 2

[Excerpts from Interview with Professor Jan Szczepanski, chairman, Sejm Commission for Socioeconomic Affairs (non-party), by Ewa Boniecka; date and place not given]

[Text] [Question] In the contemporary, colloquial sense, intellectualism coincides with a deep familiarity with different fields of knowledge and, in political categories, with a love of freedom and progress...

[Answer] Of course, but one also should keep in mind that not only people of knowledge are called intellectuals, but above all writers, artists, actors, moralists, theologians and the like. Many dictators, such as Salazar and Mussolini, for example, were considered to be intellectuals, and ideological and political divisions always have existed among intellectuals.

[Question] Indeed. For many years after World War II, however, a progressive trend dominated among intellectuals. It is only in recent years that a strong conservative current has appeared among intellectuals in many Western countries, especially the United States.

[Answer] In the United States and many other countries, an overly utilitarian definition of intellectuals also has been in use, in which the intellectual is treated not as the guardian of the "true, the good and the beautiful" but as a specialist that is to solve specific problems in the field of science, ideology and social doctrines. In Europe, on the other hand, and thereby in Poland, the definition of the intellectual as the guardian of the highest ideals still predominates. Given Poland's history, the role of intellectuals in the preservation and development of our culture during the period of our loss of freedom, the prestige and the position of intellectuals hold a special place among us. In the interwar period, when UJ professors protested against the Brzesc trial, they did this out of a sense of responsibility for the moral state of the Polish nation, to prevent the idea of justice from being violated in Poland.

[Question] We are living in an age of increasing academic specialization. This cannot but reflect on the situation of intellectuals. Does that tradition of which you spoke continue to have any bearing?

[Answer] Undoubtedly it does, but the content of this responsibility has changed. Scholars, engineers and economists serve different goals than writers

or artists. In the 19th century, Polish intellectuals felt themselves responsible for the state of the "nation's soul," while today they are responsible for the economy, industry, the level of scientific development, technology and the like, but also for the state of the social consciousness. It must be remembered, however, that one can only be responsible for something on which one has a significant impact. I cannot be responsible for something that lies outside the scope of my activity. I have the impression, however, that our people of science and practitioners always deal with that on which they have an impact. I would have a great deal of respect for our engineers if they knew how to produce door handles that did not break off, faucets that did not leak and flashlights that worked. I would have a great deal of respect for our economists if the zloty had a fixed value and if our economic system were not so illogical.

[Question] Do you somehow blame Polish intellectuals for this?

[Answer] I am merely stating the facts. I am pointing out the negative phenomena that, in my opinion, are related somehow to the methods of educating people, selecting and choosing people of science. During the interwar period, we educated 85,000 graduates of the higher schools over 20 years. In 1939, there were 2,460 scientific workers in Poland. Now we have over 50,000 and about 2 million people with a higher education. Thus, statistically speaking, we are a highly educated society. However, it is a question of the quality of this education, its effects in practice. Today we have a sort of production line in operation turning out specialists. But can we call them intellectuals? Perhaps this is a process that is inevitable in a situation where science "is worked" via industrial methods. Nonetheless, this has various results that are not always positive.

[Question] Professor, let us move on now to a view of intellectuals throughout Europe. In one of your sketches, you wrote that you believe Europe's historical, cultural and ideological diversity to be its strength. This corresponds to the idea contained in the Helsinki Final Act that accepted European diversity as a definite state and a definite plus. In your opinion, why are these facts undermined so often?

[Answer] Europe is undergoing an identity crisis. The Europeans destroyed themselves by conducting two suicidal wars that began in Europe and encompassed the world. We are inclined to idealize Europe, its culture and its civilization. But it is known that for 400 years, the Europeans subdued and fought other nations; they destroyed many cultures and civilizations on other continents. Now Europe is paying and must pay for this.

[Question] Do you not think, however, that the experiences of the two wars and the aim to ensure continental security and to avert a nuclear apocalypse will lead to the revitalization of the idea of the collective security of Europe, cooperation and the development of contacts?

[Answer] Sometimes I think that in the modern day world, it is too late for the Europeans to decide their own fate. There is a famous quote from Conrad that says: "Stupidity is the real driving force of this world and is thus worthy of respect."



[Question] Is this not overly pessimistic?

[Answer] I simply do not see the powers that could be called European and could determine the future of Europe. For example, can Mitterrand or Margaret Thatcher decide something against the will of the United States?

[Question] Let us look, however, at the 1970's, the detente period that brought the Europeans the incentive to develop mutual cooperation in all fields and to reduce political tensions. Intellectuals played a significant role in this period, if only to raise the consciousness of the dilemmas occurring in Europe...

[Answer] I do not deny this. Intellectuals can play a positive role under certain favorable political conditions. However, you must remember that if someone is a minister, a chief of the government or a chief of staff, he receives a salary not for listening to intellectuals but for performing his official duties and for guarding the interests of the state that put him in this position. These are simply the workings of politics that must be kept in mind. Therefore, I see the importance of movements in the defense of peace in their ability to mobilize voters to prevent the coming into power of politicians that are in favor of preparations for war and armaments.

[Question] In other words, it is your opinion that it is possible to mobilize public opinion toward such superior causes as the question of peace and survival and that intellectuals can play a significant role in this process.

[Answer] They can. However, during an age of the mass media, when people read less and less and only watch television, we observe a decline in the role of intellectuals in every country. If we listen to someone, it is to specialists on concrete questions. On the other hand, if an intellectual-philosopher appears on television, people think: fine, but what specific problems is he solving? Experts that supply various types of expertise and have no impact on their utilization rule the day. I do not believe that intellectuals can change politicians into angels.

[Question] But when the feeling exists that in the face of the escalation of arms, humanity is approaching the brink of absurdity, the possibility of self-annihilation, the intellectual in the classic sense of the word, as a researcher of the world, cannot flee from his moral responsibility for the fate of humanity...

[Answer] That is true. These are surely the innate risks and opportunities of intellectuals that emanate from the scope of their impact on the course of public affairs.

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POLITICS

POLAND

## FOCUS ON YOUTH ROLE IN PRE-ELECTION ACTIVITIES

### Defense League Instills Patriotism In Youth

Warsaw TRYBUNA LUDU in Polish 13 Sep 85 p 5

[Text] The Thursday press conference with the chairman of the Defense League, General Zygmunt Huszcza, was devoted to preparing this organization for the 42nd anniversary of the Polish Army and preceeding this, the Defense League.

During Defense League Week of 6-12 October, the Defense League organizations will devote most of their time to educational and patriotic-defense work among the youth.

Meetings, conferences and social evenings will be organized to commemorate the tradition of our Army. A great deal of attention has been placed on living history through meetings with the combatants and patriots who participated in the wars for independence and consolidation of socialism. School members of Defense League chapters will pay visits to veterans, clean places dedicated to national memory and arrange the graves of Polish and Russian soldiers.

During the meeting at the Defense League headquarters, editors and journalists distinguished in popularization activities of the Defense League were awarded medals and certificates. Among those distinguished was our editor friend, Andrzej Lewandowski. Congratulations.!

### Rakowski Chairs Youth Council Meeting

Warsaw TRYBUNA LUDU in Polish 19 Sep 85 pp 1, 2

[Text] On 18 September a meeting chaired by Vice Premier Mieczyslaw Rakowski of the Ministers' Youth Council took place. This meeting had special significance, as there was an analysis presented of the first 3 years of activity since 3 September 1982.

The opening remarks for very careful self-criticism of the committee's work up to now were made by Minister for Youth Andrzej Ornat. He reminded his listeners that the creation of this committee took place even before the Ninth

PZPR Congress, which was devoted to the problems of the young generation. It was expected that in this way a basis would be created for more cooperation among the Ministers' Council and youth/social organizations.

The practical result of the committee is, among others, the consideration of more than 80 matters in 24 regularly scheduled meetings. Twenty-five legal project acts on youth have been submitted to the government. The most important problems discussed included apartment construction, state social care for children and youth from different social backgrounds, services for young families, recruitment system for the universities, health protection, supplying the market with clothing and shoes and counteracting social pathology. Also important were initiatives on ideological matters and education, research on awareness among working youth, schools, and creation of an institute to research youth problems.

Here are some conclusions of the meeting:

-- the conceptional-program stage at the provincial level can be regarded as completed and full energy should be placed on implementation of the government's program for correcting conditions of youth for a good professional start;

-- youth is most interested in achieving good results. There has to be care taken to improve and broaden the committee's functions;

-- it is necessary to correct the directions and forms of committee work in accordance with social needs, youth aspiration and economic possibilities;

-- the committee must deepen the inspirational and coordinating functions vis-a-vis the departments and central institutions;

-- a very important task is to create conditions to encourage youth to be active so that their initiative will not be wasted;

-- the activity of the committee has to be cognizant of the future; for example, what will happen after 1990 when a demographic boom is expected. The creation and activity of the Youth Committee are only small parts of the larger process of political and social reform. It is worth seeing how much of the committee's work will be integrated into the social actions of youth in this and subsequent generations.

Leszek Miller, chairman of the PZPR Youth Department, discussed how implementation of resolutions passed by the Ninth Congress would assist youth. Mieczyslaw Rakowski added a few of his thoughts on those resolutions. He acknowledged that every action of the committee must be judged by results. A very important aspect of the committee's work is the honesty in discussions with participants of socialist youth organizations. Thanks to his honest and open discussion, youth problems can be surmounted. Undoubtedly, according to the premier, the committee can enhance its role and effectiveness by becoming closer to youth, organizing meetings in the countryside and encourage the

creation of more youth organizations. The feelings of youth must be honestly listened to for effectiveness. Mieczyslaw Rakowski thanked the committee for its 3 years of active work.

Information from the Ministers' Youth Committee will be supplemented with notes and sent to the Council of Ministers.

#### National List Candidate on Youth Role

Warsaw RZECZPOSPOLITA in Polish 23 Sep 85 p 3

[Interview with youth candidate Jerzy Szmajdziński by Ryszard Naleszkiewicz]

[Text] Naleszkiewicz: I have participated in many advisory meetings. At all of them were candidates for members of parliament, who had been submitted by the youth movement and also by the ZSMP. A common element in their speeches was strong criticism of today's inefficiencies and a weak program for resolving these tomorrow. We know what is bad but we do not know a way out. Arguments that youth sees things differently, that they represent the view only of their own generation, are enigmatic.

Szmajdziński: This is the only weakness of the entire pre-election discussion. This also can be seen in the voices of older candidates and participants at the meetings. We know where the pain and the troubles are, but we don't know how to work out the problems. But this looks differently. Having participated at two meetings in Tarnobrzeg, I can say that after 1 week not much was said about problems. The provincial governments and authorities immediately made decisions. This does not explain the phenomenon that youth should have a recipe for tomorrow. We had a program from the Fourth ZSMP Congress concerning the future and what should be changed as regards the economy.

[Question] Naleszkiewicz: Why is there such silence about this program during consultation meetings?

[Answer] Szmajdziński: Not all young people know how yet to translate very well known complaints and problems into general state language at public forums.

[Question] On the state register, you are listed as chairman of the ZSMP's main board and representative of the youth movement. What political program do you have?

[Answer] The representative should have the characteristic of knowing how to reach beyond his environment. He should possess the art of thinking like the state and entire society. He cannot be just a representative of his parochial and group interests.

[Question] The environment you represent has around 10 million citizens.

[Answer] This is somewhat of a different situation, more beneficial for me. The program goals of our organization and the needs of youth in general are not that different from the state's programs. This is an extra plus. Today, there are two overriding matters: the first is to increase the participation of society in governing. In our program "ZSMP Towards the Future:", we call for the increased participation by youth in governing among all representative organs and self-governments and we have to look for new possibilities of stimulating political activity (e.g., local referenda) and perfecting social consultation. It is too bad that we don't have any law on this matter. The Sejm should take this up. Not only national councils should try in very limited conditions. The entire society in a given region should try.

The second big issue is to develop better and better conditions to get the new generation started in adult life and to assist the older generation to finish its professional activity. These matters should be treated together. We have to take care of the living conditions of our parents and teachers and thank them for what they did for us and for the state. This is also a question of our future.

These two issues are absolutely paramount in the program. There are also five other issues that must be discussed: resolution of the apartment problem, feeding the nation, providing health protection and equalizing conditions for access in education, culture, sport and environmental protection.

[Question] How do you evaluate youth and their organizational activity in the socio-political life of the country?

[Answer] Not looking at the progress made in developing a law for youth, we have created a climate for increasing their participation. We have to make better use of youth counselors, who number around 10,000 in the ZSMP. They have to be active in their areas, introduce some initiatives, take care of problems for not only the youth but also the villages, cities, provinces, etc. In preparation for the Sejm elections, 207 of 300 persons participated as candidates, 60 percent of whom were ZSMP members. Ninety of them were not even 30 years old. We think the Sejm will have more youth than last time, many of whom are tied to our organization. We would like to make a youth circle in the Sejm.

[Question] You have mentioned the youth rule.

[Answer] This is absolutely needed. It will be the formal recognition by the Party Congress of the role of youth in the country. This rule will create the legal conditions for youth and their organizations in administrative activity. There are people who believe that this rule will not increase the number of apartments nor work productivity, but it will create a state of mind for participation in decision-making.

[Question] The rule will not accomplish this.

[Answer] It will provide for a formal recognition. It is up to us to use those possibilities.

[Question] At the beginning of our conversation, you stated that a representative cannot be a representative of regional interest or of a special environment. But at the same time you want to create just such a group to represent your interests.

[Answer] I got caught up in my words. Of course, a representative must have the ability to articulate the interests of his voters, but he must not forget about the national interests. For example, if asked about agriculture, a representative cannot say that he knows nothing about this subject. This is the nature of the representative--you must know about all subjects so as to vote intelligently on given issues. This goal must be with the group. It will provide a means by which to exchange views with the representatives. We want to be able to supply them with information for good decisions. Painted representatives are not needed in our political life. We inform young people about this at every opportunity.

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POLITICS ..

POLAND

PAX ELECTION MEETING

Warsaw RZECZPOSPOLITA in Polish 16 Dec 85 p 1

[Excerpts] The reporting and election meeting of PAX was held in Warsaw on December 14. The meeting was attended by 313 delegates representing the Association's voivodship and city sections.

The delegates adopted amendments to the Association's statutes and discussed the ideological and political tasks which newly elected PAX authorities should undertake.

The meeting elected new PAX authorities. Zenon Komender was unanimously re-elected chairman. Zbigniew Czajkowski, Janusz Stefanowicz, Jan Waleczek and Maciej Wreszcz became Deputy Chairmen and Marek Kabat was elected Secretary. The delegates also elected the following Presidium members: Jerzy Golinski, Wojciech Janicki, Antoni Kaplinski, Jan Mieloch, Jan Wagner, Alfred Wawrzyniak and Jozef Wojcik.

The delegates sent letters to Poland's Primate, Jozef Cardinal Glemp and to the Chairman of the Council of State, Wojciech Jaruzelski.

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POLITICS

POLAND

CRITICISM OF CHURCH CONSTRUCTION REBUTTED

Czestochowa NIEDZIELA in Polish 1 Dec 85 p 1

[Article by Juliusz Jan Braun: "In Reply to Polityka Article: Mistake Or...?"]

[Excerpts] The latest issue of Polityka (No 47 of November 23) [see PNB of November 27] brought a lengthy article entitled "Ministering to the Faithful." The author of this article, who uses the pen name Adam Jarzeniec had published some earlier articles criticizing the Catholic Church as well. When I presented this publication during a meeting of our editorial staff, someone asked: "Aren't the figures Jarzeniec quotes false?" "I don't think so," I replied. "Polityka is concerned about its image as a serious and reliable paper and I don't think it would publish untrue statistics. After all, it would be easy to prove that they were false." But I was wrong. The figures presented on page 3 of Polityka which are to illustrate the allegation that Poland has the highest proportion of churches in the world to the number of believers are totally false.

Jarzeniec's article is a reply to a series of articles by Bishop Ignacy Tokarczuk entitled "The Polish Ministry at the Threshold of the Year 2000," which have been published in Niedziela. The Polityka author, in the same way as an earlier author contributing to Argumenty, was upset by Bishop Tokarczuk's first proposal, which was to organize several new dioceses in Poland. Bishop Tokarczuk explained that he thought this was necessary for the ministry. The lay writers, atheists one might suppose, are crying out loud: "Why 40 dioceses? The existing 27 are quite enough." Leaving aside the problem of their arguments which we will discuss later, the very fact that they are interested at all in this subject is surprising. "But this is no business of yours," one is tempted to observe. After all, whether there are Catholic bishops only in Opole, Czestochowa and Lodz, or also in Sieradz, Piotrkow Trybunalski and Skierniewice, is exclusively a matter for the internal organization of the Church. Wouldn't it be strange if Niedziela suddenly started to admonish the members and leaders of the Society for the Promotion of Secularism [TKKS] on what organizational structure it should adopt?



The basic subject of Jarzeniec's article is church construction. Jarzeniec introduces this subject by discussing the numbers of priests, monks and nuns in Poland and the world. In point of fact, this has little in common with church construction, but Jarzeniec seems to view church construction as a means of creating "new jobs" for priests. If the number of priests is not growing, new jobs are not necessary, either. It is a simple fact that the Church does not serve priests, but the faithful and that there are many examples in the world which show that churches may be needed even where there are no priests. But Jarzeniec's reasoning is muddled. He is evidently obstructed by one fact which his figures clearly indicate, namely that the period of decline in the number of calls to the priesthood is now past and in recent years we have had a considerable increase in the number of students at seminaries. The author of the article tries to disparage this phenomenon by stressing that it is occurring in Africa, South-East Asia and Latin America, but not in Europe. I am ignoring the fact that the number of seminarists has grown in Europe, too, though not to such an extent, but the growth in the number of seminarists in what were once mission areas testifies to the Church's strength rather than to its weakness.

The next problem is the comparison of the situation in different countries with regard to the number of churches vs the numbers of the faithful. The author quotes precise figures on the number of permits for church building issued in Poland since the 1970s (though it is a pity that he says nothing about the previous decades) and mentions cases of churches having been built in the Przemyśl diocese without the authorities' consent. He writes: "In the latest issue of the 'Annuario Pontificio,' the column 'churches and missionary stations' occupies fifth place in diocesan statistics and the figures are missing in almost half of all cases (including all Polish dioceses). Wishing to perform at least a fragmentary comparison of the number of believers per one church in different dioceses, we could only compare the foreign data supplied in the 'Annuario Pontificio' 1982 and the figures presented in the Pallotine work 'The Catholic Church in Poland 1945-1982,' which were issued two years later, so they are lower. This fact has taken some edge off this comparison, but has not quite destroyed it."

It is the author's secret why he considers later figures lower than earlier ones and why he has not taken the figures for Polish dioceses also from the "Annuario Pontificio," if he believes this yearbook to be a more credible source. He ignores the fact that the "Annuario Pontificio" naturally cannot provide figures "for today," but has to publish them with some delay. The "Annuario Pontificio 1985" presents statistics collected on December 31, 1983.

Polityka prints a lengthy table with figures from which it draws the following conclusions: "These figures, fragmentary but supported with the so far unquestioned prestige of the Annuario Pontificio," lead us to a sensational conclusion on the construction of churches in Poland against the background of the situation in the world. That conclusion is that in the average Polish Catholic diocese there are more churches (and more spacious ones) in relation to the number of members of the parish than in the large agglomerations and historic capitals of Catholicism in the West."

These conclusions would perhaps be sensational if the figures were true. I do not intend to question the reliability of the "Annuario Pontificio," but the honesty or qualifications of the Polityka author. Unfortunately, Niedziela does not yet have the latest copy of "Annuario Pontificio," so we will have to use the 1984 copy, which, however, doesn't change the picture much. What information does the "Annuario Pontificio" present? The part entitled "Archdioceses and Dioceses," which contains 600 tightly packed pages, presents an alphabetical list of all the Catholic dioceses in the world together with various statistical information. Jerzy Jarzeniec was so fascinated with the column "Churches and mission stations" that he overlooked the previous column: "Parishes and quasi-parishes" (i.e., parishes and centers performing the tasks of parishes, though not officially recognized as parishes). Accordingly, nothing that there are 30 churches in the Dublin dioceses in Ireland, he overlooked the 185 parishes, each of which, of course, has a church.

Let us now compare the figures presented in the table published in Polityka and the actual figures provided in the "Annuario Pontificio." We have already commented on the case of Dublin. Madrid has not only the 69 churches which Jarzeniec noticed, but also 651 parish churches, so it is not true that there are more than 59,000 Catholics per church there; in fact, there are 5,903 per church. Barcelona, Paris and Ljubljana are the only dioceses in which the average parish numbers more than 10,000 believers, while in the majority of areas selected by Polityka the parishes have less than 5,000 believers. Although the Catholic Church in the West is indeed suffering serious problems due to a shortage of priests, the situation is not as dramatic as Polish readers are sometimes told. In the Madrid diocese, which embraces 4,250,000 Catholics (out of nearly 5 million inhabitants), there are 1,998 diocesan priests and 1,479 ordained brethren.

One could question the rationale of the comparisons offended by Jerzy Jarzeniec, because the fact that some country has more or fewer churches, larger or smaller dioceses or parishes does not mean that the situation in Poland should be the same. The situation in Poland should be adequate for our needs. But since we have entered into comparisons, let us continue them. Jerzy Jarzeniec claims that 40 dioceses are too many. However, he says nothing about Church structures in other countries of Europe. Let us leave aside Italy, where there are several hundred dioceses, some of them smaller than the average Polish parish. In France there are 85 dioceses with an average of 508,000 believers, and 35,160 parishes (with an average of 1,230 believers). Naturally, there are various parishes and dioceses. The Parisian diocese covers only the center of the present area of Paris, so it cannot be compared with the Warsaw diocese, which covers not only the densely populated city districts but also the dispersed villages of the region surrounding Warsaw. The Parisian diocese and the other dioceses covering the area of "Greater Paris" have more than a million believers each, but, for instance, in the Mende diocese there are less than 75,000 inhabitants including 64,000 Catholics in an area of about 5,000 square kilometers. This diocese is divided into 138 parishes, with 221 diocesan priests and 4 ordained monks.

Let us take one more Catholic country in Europe--Ireland. It has 21 dioceses (with an average of 145,000 people) and 1,067 parishes (with an average of 2,860 people).

In Poland there are 27 dioceses (so each of them consists of on average 1,3 million people) and 7,715 parishes (with 4,516 people on average). However, there are great disproportions between the parishes. According to the work "Religion and Social Life," at the end of 1982 7.7 percent of all Polish parishes still had more than 30,000 believers.

Jerzy Jarzeniec voices firm protest in connection with the social and cultural aspects of the Church's activity. He is displeased with what he claims to be excessive building of premises for religious instruction. We can hardly elaborate on this subject here, but could just note that in this case Jarzeniec has proved over-zealous--none other than the Premier of the Polish Government recently appealed to the Church for help in educational work at the Sejm.

Jarzeniec's article contains many strange statements, each of which would require extensive comment. To Jarzeniec, both the fact that Bishop Tokarczuk's article has been quoted by Radio Free Europe (incidentally, it was from Polityka that we learnt this), and that the West Germans have contributed to the construction of some churches in Poland is incriminating evidence. Is it worth arguing with him?

But I have to make one firm protest. All arguments presented by Jerzy Jarzeniec lead to the unequivocally formulated conclusion that the authorities should think twice before they issue more permits for church building. Is Jarzeniec intent on fanning a conflict which fortunately was becoming a thing of the past? We hope that he will not be the one to make the decision.

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POLITICS

POLAND

BRIEFS

GIFT TO CZESTOCHOWA MONASTERY--Bonn (PAP)--The DPA news agency reports that West German President Richard von Weizsacker has donated DM 30,000 to the conservation of the icon of Our Lady at the Jasna Gora monastery in Czestochowa. The icon, writes DPA, has been regarded as a sacred national picture by the Poles for six centuries. [Text] [Warsaw ZYCIE WARSZAWY in Polish 24-26 Dec 85 p 4] /9317

WYSZYNSKI MONUMENT IN WARSAW--On December 4, Warsaw President Mieczyslaw Debicki received Warsaw Suffragan Bishop Jerzy Modzelewski and representatives of a committee for building a monument to Cardinal Stefan Wyszynski. The President expressed his approval for the idea of erecting a monument to Cardinal Wyszynski at the Church of Nuns of the Visitation in Warsaw's Krakowskie Przedmiescie Street. The terms of building the monument have also been specified. [Text] [Warsaw RZECZPOSPOLITA in Polish 5 Dec 85 p 5] /9317

CHRISTIAN SOCIAL ASSOCIATION IN MOSCOW--A delegation of the Christian Social Association [ChSS] led by Kazimierz Morawski, ChSS Chairman and member of the Council of State, has visited Moscow at the invitation of the Moscow Patriarchate of the Russian Orthodox Church. The delegation conducted talks with representatives of the Moscow Patriarchate led by Minsk and Belorussian Metropolitan Filaret. The two sides signed a joint statement in which they expressed support for the standpoint presented by CPSU Secretary General Mikhail Gorbachev during the Geneva talks with President Reagan. [Text] [Warsaw RZECZPOSPOLITA in Polish 5 Dec 85 p 7] /9317

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SCIENCE AND TECHNOLOGY

CZECHOSLOVAKIA

INTERNATIONAL INFORMATION SYSTEM FOR SOCIAL SCIENCES

Prague TVORBA in Czech 11 Dec 85 p 14

[Article by Stanislav Hanis: "MISON: The Way Toward Evaluating Information-- On the Creation of an Automated Information System in the Social Sciences"]

[Text] Soviet academician V. A. Vinogradov, writing in the periodical VOPROSY FILOSOFII, states that "an important global aspect of the information revolution in the 20th century is also the specific rise in the social value of information. Despite the fact that knowledge and information have always had a great significance, it was only in the 20th century, with the growth in the rate of social progress and with the development of the scientific-technical revolution, that information has become an irrefutable strategic resource of mankind"; and he thus puts his finger on one of the most important facts of the modern world.

Particular value attaches to the mastery of new information by states of such a magnitude and economic level as exists in Czechoslovakia. It is generally said that Czechoslovakia shares in the world scientific research potential only to the extent of 1.13 percent (this factor must be taken only as a certain illustration, since, thus far, sufficiently accurate criteria for measuring the capacity of science and research have not been established). Given the considerable volume and assortment of the extent of social production (and in view of the high degree of education and cultural development), our information requirements are immeasurably broader than the extent of our contribution to the world fund of knowledge. This is why these questions occupied the Eighth Session of the Central Committee of the CPCZ which made the following statement with respect to the development of informatics, among others:

"We ascribe great significance to the entire information system which must correspond to the seriousness of the tasks solved in the area of scientific-technical development. We require that essential scientific, technical, and economic information be available for all categories of creative workers, components and organizations responsible for the management and utilization of scientific-technical development. Toward this end, it is necessary to substantially improve the quality of information services, to technically perfect information work sites and to more effectively utilize the means destined for the purchase of foreign information. Furthermore, it is necessary to make progress in the integration of Czechoslovak and Soviet information systems."

The emphasis on international cooperation stems from several simple facts: It is precisely in this area, perhaps more so than in any other, that the effort toward self-sufficiency is impossible. The threat of isolation and the loss of contacts with world developments is very real in this area. It can be fulfilled if we underestimate the international extent of this work. On the other hand, it is clear that efforts under way to make more difficult our access to information resources of the most developed capitalist countries (through the help of administrative and economic instruments) will clearly continue to strengthen. Even for this reason, let alone the already traditional results of the coordinated creation of information systems, it will be necessary to develop international cooperation within the framework of the socialist countries even more intensively than heretofore. An indicative example of the fact that, even during a short period, it is possible to achieve good results is the International Information System in the Social Sciences (MISON) which was initiated not quite 10 years ago.

### The Creation of MISON

Establishment of the MISON information system was preceded by a number of significant negotiations for which the principal impetus was constituted by the consultation of secretaries of Communist and worker parties for ideological work which was carried out in 1973. At this session it was emphasized that in the ideological struggle between two world systems it is not possible to underestimate the significance of an effectively functioning and qualified information background. The result was the establishment of MISON in July 1976 in Moscow. The treaty was signed by representatives of the Academies of Sciences of the Bulgarian People's Republic, of the CSSR, of Hungary, of the Mongolian People's Republic, of Poland, and the USSR, and, effective in 1978, it is also participated in by the Vietnamese Socialist Republic (and, as of 1984, even by Cuba). The core of this information system is the Institute of Scientific Information in the Social Sciences of the USSR (INION). It is connected with selected national MISON organizations, which are represented by the central information work sites of participating academies of science. In Czechoslovakia, this function is fulfilled by the Basic Library of the Center of Scientific Information of the Czechoslovak Academy of Sciences (ZK-UVI), in conjunction with the Central Library of the Slovak Academy of Sciences. The work of the MISON organization is managed by the MISON Council, whose members are the directors of national work sites; the chairman is Academician V. A. Vinogradov.

Even though the area of cooperation pertaining to MISON is, in general, the entire area of the social sciences (with the exception of culture and school information), the set of data has grown gradually, first in the economic sciences and later in philosophy, sociology, and scientific communism and in the area of knowledge pertaining to science. Currently, work on the science of the state and of law, work on history and other topics is starting up. The result is a communal, central set of data which now represents approximately 250,000 information units (basic bibliographic entries, including key words and annotations), and, starting next year, an increase of approximately 200,000 units per year is anticipated. The basis for information technology for the present era is computer technology and, in the MISON program, primarily the JSEP system of computers.

Establishment of the automated MISON system must respect the principle of international interconnection, compatibility for processing, assembling and utilizing of followed information. The maintenance of this goal in a multilanguage set whose task is to master all substantive information which has arisen in the world and arises in the social sciences, is not simple. Just the processing of hundreds of thousands of contributions which are printed in various languages, results in problems. And, furthermore, it is necessary to transpose these contributions into a uniform method of technical processing and to convert their significant portions to the common MISON language--Russian.

#### User Requirements Are Decisive

The automation of MISON has entered into a decisive phase and, thus, also fundamentally changes the existing history of this great international project. Beginning in mid-1983, the central information data base of MISON is accessible through remote connections between Prague and Moscow (and effective the end of 1984, a connection between Bratislava and Moscow is available). Some 26 of our leading social science and other specialized work sites are using this connection in dialogue form through the central technical base. The dialogue regime means that the user communicates with the data base by means of a terminal or a picture tube and by gradually making his requirements more precise arrives at the required selection of information. For the time being, the user cannot get by without the assistance of a specialist who has thorough mastery of the philosophy of the entire system and is familiar with its specific vocabulary. Otherwise, the line would be burdened for long periods of time and this is, naturally, not cheap. Of the already accomplished hundreds of accesses of the central data base it is possible to reach the conclusions which clearly indicate the effectiveness of the efforts expended: the speed of the response and the program sets which facilitate selection of data from the data base prove that the parameters of the MISON system are fully comparable from the technical standpoint with similar Western systems and, in some areas, are even better. Despite the fact that the specialized sets of lexicons--in which the basic libraries of centralized scientific information are simultaneously arranged in Czech-Russian or Slovak-Russian translation computer dictionaries--and will, essentially, continue to be developed and perfected, the opportunities already exist today to create high-quality research even in highly specialized areas. The research work is positively evaluated by users, since roughly 80 percent of the data fall into the area of interests followed by them and more than 50 percent of the entries are among new entries which are, for the time being, unknown from other sources. The extent of the data with which users should be working (or about which they should at least be knowledgeable) is, thus, demonstrably increased through this method. The MISON data base contains data not only from the socialist countries but, to an essential extent, also from other world production. And, to differentiate from similar systems in capitalist countries, contains extremely detailed specific results of social sciences in the USSR and in the other socialist countries to an extent which does not exist in any of the data bases of the capitalist states.

The most significant results of current facts obtained from the AIS MISON system can be considered to be the fact that it can be used not only for supporting the requirements of our own social sciences but even for assuring the

information requirements and needs of various branches of the national economy. This is particularly true of the data base bearing on economic sciences. Of a series of specific examples, it is possible to list the working out of research on the topic of the prognosis of the development of energy-efficient directions of production. Because Czechoslovakia can select from a total of 252 various worldwide data bases the same research was conducted using Western sources of information for purposes of comparison. Only about 60 percent of the entries gained in this manner corresponded to data from the MISON system; this means that 40 percent of the entries in MISON were new and had not yet been captured by other data bases.

The existing development of the MISON system, particularly the utilization of those opportunities which are presented by its automation through the use of computers, have shown that the path which has been entered upon is useful and hopeful. We can counter the efforts of capitalist countries to impose some kind of information monopolism by creating our own information system. However, its goal is not some kind of information autocracy, even on the scale of the world socialist system. Damage done by limiting the exchange of information--and the proponents of any kind of embargo tend to forget this--can only be bilateral; they never impact only on the side at which they are aimed.

Services provided by the AIS MISON system will continue to expand. Despite relatively significant investments and despite great efforts which will need to be expended in this area, it is clear that we are dealing with a useful thing which has meaning not only for the development of knowledge but also for social practice.

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SCIENCE AND TECHNOLOGY

HUNGARY

## JOINT OPERATION OF ESR SVM, SVS OPERATING SYSTEMS

Budapest INFORMACIO ELEKTRONIKA in Hungarian No 1, 1985 pp 33-38

[Article by Sandor Csizmazia, Anna Recski and Ference Roman: "Experiences With Joint Operation of ESR SVM and SVS Operating Systems"]

[Text] Theme codes: 32 (operating system) and 72 (comparative analysis).

A new ESR operating system, the SVM (System Virtueller Maschinen), arrived in Hungary in the fall of 1983. The article describes practical experiences with operation of SVM and making systems more efficient.

Arrived: 16 October 1984.

### Antecedents

In the last quarter of 1983 a client of SZAMALK [Computer Technology Applications Enterprise] purchased an ES 1055 computer manufactured in the GDR, with 4 M bytes central memory and a rather large background memory. The machine supports virtual memory management.

### Description of Operating Systems

The German side was able to deliver or sell three types of software for the machine:

--a machine oriented system (OS 6.1 M8 distributive system and its subsystems), see figure 1,

--an SVM system, see figure 2, and

--problem oriented systems (for example, a data base management system and a mathematics program package), we will not deal with this last item.

### The OS System

The following belong to the machine oriented system:

--basic operating systems: MFT, MVT, SVS. Only the MFT and MVT can be used on the series I ESR machines, the SVS system can operate only on series II ESR machines making virtual memory management possible.

--basic compilers: PL/I, COBOL, FORTRAN, RPG, ALGOL and SORT/MERGE. These batch compilers can be used in all three basic operating systems.

--developed compilers: Assembler II, further developed COBOL, COBOL prompter, conversational COBOL, PL/I optimizer, PL/I checkout, FORTRAN G1, FORTRAN CODE and GO and SORT/MERGE II. All the possibilities of the COBOL prompter, conversational COBOL and PL/I checkout can be exploited only in the conversational mode.

--conversational systems: CRJE, TSO. In its present version TSO still works only in the MVT system. CRJE can be used in all three basic operating systems, but since it is rather obsolete it provides only very few services to the user.

--spooling system: SPAM. This spooling system, which can be compared to JES operating in OS/VS1 to a certain extent, can be used only in the SVS operating system. SPAM is optional, we have to decide at the time of system generation whether we want to use it. It is a substantive restriction that SPAM and CRJE cannot be used jointly but only separately.

#### The SVM System

The SVM system belongs to the second group. The SVM system is comparable to the IBM VM/370 system, and the essential thing is that under it one can run several operating systems on the same computer at the same time. For example, if an OS system and a DOS system are being used off and on in a computer center then one can imagine a solution where the OS and DOS would run at once under SVM.

The SVM system developed from the meeting of two software development trends. The first represents the principle of multiprogramming, the purpose of which is better exploitation of resources. To do this the (only) central unit is not put in the service of one process exclusively but rather a number of processes will use it in an overlapping manner. (This possibility existed on every machine which worked with an interrupt system.) The other trend, introduction of the principle of virtuality, appeared later in time and meant that in the interest of better exploitation of one physical unit a number of virtual copies of the unit are made or simulated in memory or in a disk area and these, also overlapping, supply the real physical unit with work. The first step in this process was simulation of the memory in some disk area, later in VM/370 and then in SVM they simulated I/O units and, indeed, entire computers. So the goal was to execute the overlapping activities and to use, by simulation, the tools necessary for the activities. The SVM system satisfies these requirements.

The SVM operating system can simulate in one given computer a corresponding number of virtual machines. These virtual machines can be initiated from console or terminal. The operator at the terminal can operate the system as the operator of the given operating system and, on the other hand, as a user of the system. The functions of the physical devices which can be found on the operator's console of a real machine can be used by the operator of the virtual machine with the aid of commands.

In addition to coordinating the work of the virtual machines the SVM system supports efficient conversational program development, use of remote terminals and evaluation of system errors with special procedures. Accordingly SVM has four main parts:

- the control program (CP),
- the conversational program development system (PTS),
- the system handling remote terminals (RFTS), and
- the error analyzing system (PDAS).

The latter--the PTS, RFTS and PDAS--are individual operating systems each operating in a virtual machine.

Detailed description of the components:

1. Functions of the control program:

- distributing the resources of the real machine,
- scheduling the I/O operations,
- handling various interrupts,
- handling the multilevel virtual memory, and
- distributing use of the central unit.

2. Possibilities of the conversational program development system:

- creating files,
- editing files,
- translating, running and testing programs, and
- efficient data movement among the virtual tape units, readers, printers, punches and disk units.

3. Task of the system handling remote terminals:

- providing a link between a remote terminal and a virtual machine, data movement.

4. Task of the error analyzing system:

- discovery, correction and collection of system errors with conversational tools.

## Connection of VM With the Virtual Machine Running Under It

There are a few operating systems using virtual memory which were prepared for possible operation under VM. When running under VM such an operating system takes cognizance of this fact (that it is under VM) and prepares for cooperation. For example, in the event of initiation under VM, after IPL and during NIP, it issues to VM the command CP SET PAGEX ON, as a result of which, if there is a task in the system awaiting page-in then only this task waits. (If this command is not given then, in the event of a page error, the entire virtual machine goes into a waiting state.) With the aid of handshaking (creating a mutual link) it is also possible to avoid having both VM and the operating system in the virtual machine issue certain privileged instructions.

If handshaking is established there is yet another possibility which greatly increases efficiency--nonpaging mode operation. It is an important precondition for this that the virtual memory provided the virtual machine by VM coincide with the virtual memory of the operating system running in the virtual machine (or, looking from above the virtual machine, that the size of the real memory and the virtual memory be the same). In the nonpaging mode the "real memory" coincides with the virtual memory, thus the operating system running in the virtual machine does not have to page, because this is not needed. Thus only VM pages and so double paging can be avoided.

Of the operating systems used in our country the IBM DOS/VS and OS/VS1 and the ESR SVS system were made for handshaking. An operating system not made for this (for example, IBM SVS) would be so slow under VM that it practically could not be used regularly or systematically.

There is a possibility in ESR SVS which makes it very convenient to send work from a conversational PTS machine to an SVS machine and to get output back from it into the PTS machine. This is a new parameter introduced in the job control language of OS, the VMID parameter, which can be given in JOB and DD instructions and serves the purpose of sending to the card reader of a virtual machine identified by the user in this parameter the lists generated in the course of running the job.

## Selecting the Operating System

When selecting the operating system we first took into consideration that because of the guarantee conditions only software of ESR origin could run in the machine. An efficient conversational program development system was absolutely needed for swift conversion from the computer which had been used up to then. The possibilities of the ESR software had to be compared with the requirements being made of the machine. A basic requirement--since it was a series 2 machine--was exploitation of the possibility providing virtual memory management, for this offers a way to handle storage efficiently. On a machine of this size with such a large background memory possibility it was just to require, in addition to batched processing, a conversational program development possibility and, naturally, an efficient spooling system as well.

Of the ESR operating systems only SVS could be considered, since only this system could exploit the possibilities of the machine. The SPAM spooling

system could be operated in SVS but unfortunately, of the conversational systems, TSO does not work in SVS and CRJE cannot work with SPAM. Since CRJE also does not make possible conversational program development, attention turned to SVM, in which there is a system supporting efficient conversational program development (PTS) and in addition it could take over the tasks connected with spooling from the systems running under it.

Taking all this into consideration it was decided to run SVM on the ES 1055 with an SVS operating system under it--together with PTS machines (figure 3). A serious role in this decision was played by the fact that according to the German experts SVS could attain about 80 percent efficiency under SVM, compared to operation without SVM (we called the latter the native mode or the independent operating mode). Thus the SVM + SVS mode simultaneously satisfies the requirement that there be batched runs, conversational program development and a spooling system in the system.

The systems were created according to plan, and although we received with doubt the promises connected with 80 percent efficiency it caused great surprise that SVS fell quite below the expected efficiency. In regard to running time the ES 1055 machine behaved as if it were an ES 1020. Naturally this was not suitable, so the efficiency of the systems had to be increased, trying out the possibilities for increasing efficiency, separately in the SVM and SVS systems and in the cooperation of the two systems. We report on this below.

#### Possibilities for Increasing Efficiency

##### The V=R Area of the SVS Machine

Translating the channel programs requires significant time in virtual operating systems. The large central memory--4 M bytes, large compared to domestic conditions--made possible a significant augmentation of the V=R line in the SVS system, and thus made it possible to run user jobs in the V=R area. In this way the translation of the channel programs in SVS could be avoided and thus the programs for access methods accelerated. By introducing running in the V=R area the efficiency about doubled.

##### The V=R Area of the SVM Machine

Running is also possible in the V=R area in the SVM system, but there are preconditions for this. The most important of these is that the size of the V=R area must be given when generating the SVM system, and this cannot be changed later. In general the V=R area is created so that the operating system for batched processing under SVM can run in it. A virtual machine is authorized to use the V=R area only if the VIRT=REAL option figures in the directory pertaining to the machine, where we describe the hardware environment. This option can figure in the directory input for a number of machines, but only one machine can use the V=R area at a time--always the one which registers first. So, for example, if we want to operate SVS here we can do so in two ways. Either we get the SVS machine to register first automatically, thus taking the V=R area for itself, or, which is much simpler, the VIRT=REAL option figures in the directory exclusively in the description

of the SVS machine. Running a virtual machine in the V=R area means that the virtual machine uses the lower part of real memory, that is that SVM will not page and it need not compete for memory with the other virtual machines.

This is advantageous in itself, but the real increase in efficiency lies in additional possibilities of operation in the V=R area. The SVM system uses so-called shadow tables to access the virtual memory in the virtual machine running under it; these tables perform mapping between the real memory of the real machine and the virtual memory of the virtual machine. In SVM there is a CP option which can be reached only by the machine running in the V=R area, using a virtual operating system, and it is an option which makes shadow tables superfluous. This means that if we give the CP SET STB VR command from the machine in the V=R area which is operating the SVS operating system, then only SVS translates the addresses, SVM regards every address reference as a real address, and it turns neither to the shadow tables nor to another table connected with paging. This significantly increases the efficiency of the machine operating the virtual operating system running in the V=R area.

(We should note that this pertains only to a virtual system; on the one hand because only in this case do shadow tables have a role, thus only have any sense then, and on the other hand because the first page of real memory, the first 4 K, belongs to SVM, and the machine running in the V=R area gets a page elsewhere in its place. In order to access this area which is elsewhere and not at a real address the virtual machine must modify the real address of the page in its own page table, so it is necessary for the system running in the V=R area to use address translation. Thus, for example, issuing the above option in an MFT system would cause faulty operation.)

There is still another possibility to increase the efficiency of the virtual machine in the V=R area, and this is connected with translation of the channel programs--similar to what was described for the SVS machine. Every channel program in the virtual machine running the virtual system and operating under SVM will be translated twice; on the one hand SVM and on the other hand the virtual system operating under it will perform channel program translation.

There is a CP option in SVM with which we can forbid translation of the channel programs, but we can do this only if our virtual machine is using channel programs to refer only to addresses for which the real and virtual address coincide. It follows that we can use this option only if the virtual machine is working in the V=R area and, in addition, if there is no reference in the channel program to the first 4 K, which belong to SVM and not to the virtual machine.

In order for the machine in the V=R area containing the SVS operating system to be able to issue the CP SET NOTRANS ON command, which forbids channel program translation by SVM, it must be ensured that no channel program can refer to the first 4 K of SVS memory either. In order to do this we must change the SVS nucleus so that the UCB's start above 4 K. This was necessary because in the event of unit errors the SENSE I/O instructions will write the state bytes into the UCB's. And if the UCB's were in the first 4 K then when a unit error occurred--after disconnecting channel program translation--the

SENSE I/O would overwrite the SVM nucleus, since actually it is in the first 4 K of real memory.

We should also know that the IPL command issued by the virtual machine will write on page 0 in any case, so we can request disconnection of channel program translation only after execution of IPL. Thus, first we must modify the nucleus when generating the SVS system, then after the IPL given to the SVS system operating in the V=R area we can issue the CP SET NOTRANS ON command. (In addition, leaving out the translation of channel programs accelerates the work, especially when handling index sequential data files.)

(A new modification of SVS has reached the country since then in which the UCB's are placed above 4 K in advance; so in this version it is not necessary to carry out the modification described above.)

Significant increased speed was attained with the above two options (SET STB VR and SET NOTRANS ON).

#### Recording Certain Parts of SVM in Memory

With the aid of the LOCK command we can record certain pages in memory, thus we can take them out of the sphere of the SVM paging algorithm. Since the unpagable part of the nucleus is automatically recorded it is useful to record the routines of the interrupt handling system and the paging algorithm on the other part of the nucleus. In the system prepared we recorded nine pages. This accelerated operation of SVM.

#### Using the Resident Lists in SVS

We also tried to make the frequently used modules resident in SVS, but we were able to achieve only an improvement less than expected with this. The most important reason for this is that due to the large storage the frequently used modules are virtually never paged out. Another, also essential, reason is that the German experts provided the distributive system with better resident lists, more suitable for ESR machines, than we were used to in IBM systems.

#### Disks and Placement of Files

In the case of our client the magnetic disk units operate on two channels so it was possible for us to decide, with careful planning, how to distribute the disks between the channels. In this way also it is possible to attain a substantial increase in efficiency.

The importance of the placement of data files among disks and within a disk is well known and is a factor used in various OS systems everywhere to increase efficiency. For this reason we will deal now only with the disk distribution of SVM.

The goal in SVM also is for the system to tap the several disks as evenly as possible and for the densely used disk areas within a disk to fall at the center of effort of head movement. It is useful to put the address list at the very beginning of the disk, following which we can make room for the CP

nucleus. Then it is useful to leave space for temporary disk areas, thus if there should be a nucleus expansion later it will not be necessary to change the structure of the entire disk. Then should follow the system disk of PTS; this is used densely by conversational machines. If we then designate the most frequently used SYSERR, SYSWARM, SYSCKP areas (containing system error files, the saves needed for a warm start and the saves needed to restart from a checkpoint) they will fall about in the center of effort for head movement. It is also useful to set up a secondary system disk, and the spool/page areas can be placed mixed on both disks. It is useful to put user disk areas and large temporary disk areas on the secondary disk too.

#### Giving the Advantage to a Virtual Machine in SVM

With the following methods one can arrange it so that SVM will put one virtual machine in a more advantageous position to the detriment of the other virtual machines:

--With the SET RESERVE command we assign a certain number of page frames to a virtual machine, but these remain in the sphere of the paging algorithm. That is, these pages could be paged out, but their place can be taken only by pages of their own virtual machine awaiting page in.

This command can be issued only in one virtual machine, and if the other virtual machines should not have room for new pages then the system automatically erases the occupied area. Issuing the SET RESERVE command is especially useful for a virtual operating system operating in the non-paging mode as mentioned for handshaking, when it is also useful to assign a certain number of page frames to the virtual machine directly.

--When determining the hardware environment of the virtual machine among the directory entries it is possible to give priority for the virtual machine in regard to the scheduling algorithm in the USER instruction. The priority given in this way influences the sequence of the machines awaiting execution in the two lines (WAITQ1 and WAITQ2) in which the conversational or batched processing machines are waiting. This scheduling priority, to which the execution priority is added, gives the sequence in the list (the routine list) whereby the virtual machine at the head of the list always gets control. The value of the priority can be between 1 and 99, the highest priority is 1.

--With the SET FAVOR command we can modify the operation of the execution algorithm so that we can always keep a virtual machine on the previously mentioned run list (with the exception of certain wait states).

#### Conclusions

A substantial increase in efficiency was obtained with the combined aid of the tools described in the preceding chapter. Both our client and SZAMALK considered the tuning successful, taking into consideration the given conditions and the ESR software environment.

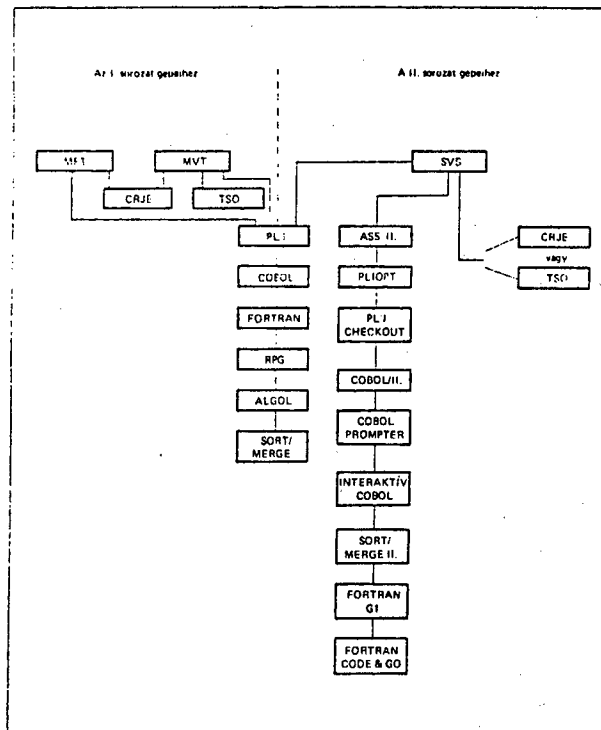


Many problems came to light in the course of increasing efficiency, for example that the analytical methods delivered with the software were not satisfactory. Because of this SZAMALK is now preparing a broad, developed testing and analysis system.

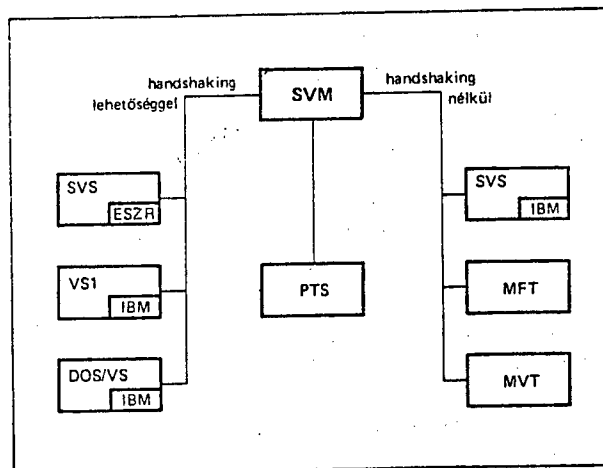
We should mention here that when studying the efficiency of a software system it is worth while to measure the module traffic of the operating system only with multiprogramming on an appropriate scale. We must also see clearly that with the appearance of conversational systems the use characteristics of the machine deviate to a significant degree in day, night and weekend shifts. The need arises to use different resident lists or even a different nucleus in different time periods--in accordance with the peculiarities of the several shifts.

Despite the increase in efficiency the services, efficiency and reliability of the operating systems used did not become satisfactory (for example, using the conversational COBOL error filter did not succeed). For this reason our client decided that in the future there would be a need for more reliable, more efficient software offering a good many more services. The choice fell on the IBM OS/VS1 basic operating system and the GUTS conversational program development system. VS1 has a remote batched processing subsystem (RES) in addition to a spooling system (JES) which fits into the system well (Fig.4).

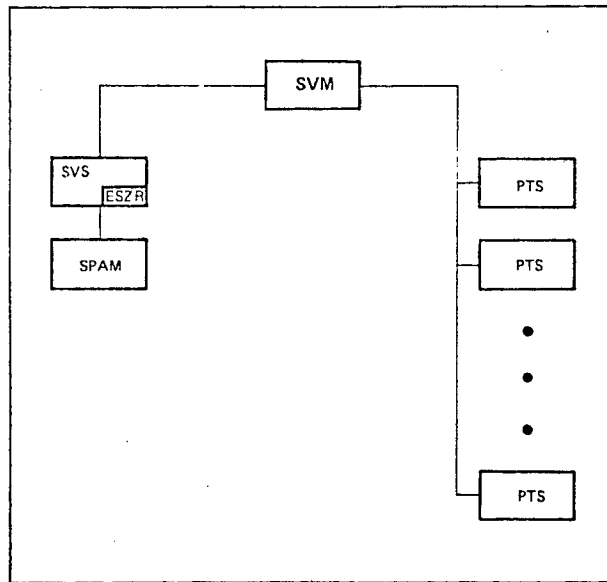
The first tests indicate that the IBM OS/VS1 operating system is at least 20 percent more efficient than the ESR SVS system. Use of the OS/VS1 system on the ES 1055 machine caused no problems; indeed, after minor modifications it is also capable of handshaking and nonpaging mode operation under ESR SVM.



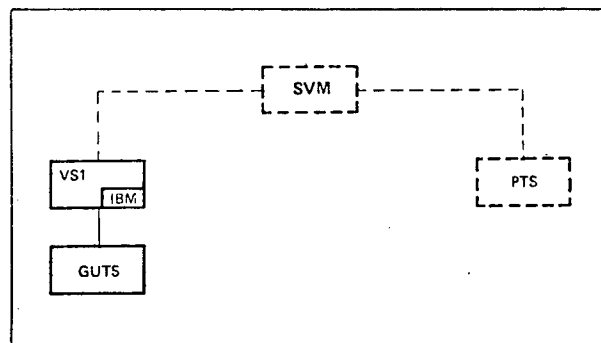
Summary table of the machine oriented system provided by the German side. (On the left: "For Series I Machines." On the right: "For Series II Machines.")



The SVM system and summary of the operating systems which can run under it. (On the left: "With Handshaking Possibility." On the right: "Without Handshaking.")



Connection of the SVM system with the SVS and PTS systems running under it.



Connection of the SVM system with the OS/VS1 and PTS systems running under it.

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MARKET FOR COMPUTER SOFTWARE, SERVICES ANALYZED

Budapest FIGYELO in Hungarian No 48, 28 Nov 85 p 4

[Article by Istvan Dienes: "The 'Clustered' Market"]

[Text] The number of organizations producing computer applications products and services was 826 in 1982 (including the small organizations); it was 1,200 in 1983, and rose above 3,000 by 1984. The number of large organizations was 267 in 1982 and was 332 one year later. The unaccustomed dynamic of the proliferation of undertakings in Hungary also illustrates the growth of supply and demand.

The number of computer technology employees was 27,000 two years ago; last year it was already 35,000. This does not mean a growth in the work time base of this magnitude, because the same employee may work in both large and small organizations. Last year the small organizations had about 10,000 members; nearly 30 percent of those dealing with computer technology work here. Even deducting the VGMKs [enterprise economic work associations], every fifth computer technician is in a small organization or is also active in one. The vigorous growth of the "little ones" indicates that there is a need for "bridge mechanisms" which might make it easier for some successfully growing small organizations to become socialist large organizations.

The receipts of the small and large organizations doing machine data processing increased significantly--which indicates the size of the market. The small organizations grew more quickly than the large organizations in percentages and in absolute values and a substantial ratio shift took place in their share of the market.

The market share of the large organizations was 93 percent in 1982, 87 percent one year later, and only 73 percent last year. The receipts of the "big ones" increased by 370 million in 1983 and by 180 million in 1984, while the receipts of the "little ones" increased by 549 and 1,178 million forints respectively. Sales receipts of big and little organizations deriving from machine data processing increased by 22 percent per year between 1982 and 1984, which approaches the 25 percent development rate of the international front rank.

The per capita receipts of the small organizations significantly exceed those of the large organizations--sometimes by 300 percent--and so incomes can be substantially greater.

On the basis of the distribution of activities among organization types the conditions already exist for creation of an actually functioning market. But

the behavior of customers and vendors is often not so market like as the situation would justify. For example, many deals come into being by excluding professional "publicity" or competition. The domestic market consists of tiny part markets, the participants know one another well, and the number of products is small.

Foreign markets are less well known, often they are unapproachable because of the different hardware. In 1983 they had 18 percent of the sales; in 1984 only 15 percent.

In Hungary the branch classification system distinguishes more than 100 special information branches within about 300 branches and the registry of service activities distinguishes about 250 information services, from estimation of breeding value through meteorological activity all the way to transcription and translation. Computer technology and software services are listed here as well. Information activities in themselves are of different types, the applications software products depend on the type of computer--although to a lesser extent than the basic programs--so it is hardly to be wondered at that not every segment of the market is covered by an undertaking and even today there is not competition everywhere.

Certainly some of the software could be obtained from abroad--possibly from the socialist market. But differences in the economic guidance systems, the technical culture and the standards make it illusory for us to buy the larger part of applications software from abroad as ready systems. It would be difficult to introduce much more foreign competition on the domestic market for basic programs--for foreign exchange and embargo reasons.

There are no data about the distribution of the receipts of the small organizations according to service or product. It is probable that the industrial cooperative groups and small cooperatives are dealing primarily with software production, organization and computer technology research and development--in accordance with their intentions--while the profile of the VGMKs and small enterprises resembles that of the large organizations.

The ratio of non-custom software products--products which can be used in a number of places--has increased somewhat in the software marketing receipts of the large organizations (from 26 percent in 1982 to 31 percent in 1984).

The market share of information services (database services) requiring developed remote processing and greater capital strength is small for the time being, and only the large organizations are dealing with it.

The degree of monopolization of the market can be measured by the market share of the largest producers and vendors, among other things. Studying the 22 product groups included in the registry of machine data processing products (on the basis of value data) on the market for the program products of large organizations it turns out that about three quarters of them are sold in such a way that the largest producer has less than two thirds of the market. In four product groups--including the sale of financial institution and educational programs--the share of the largest producer is greater than 90 percent, but such software represents only 2.5 percent of the market (in value).

One can conclude from these figures that the market for the software products of large organizations is less monopolized than that of industrial products in general, but it can hardly be considered a competitive market.

The small organizations have certainly loosened this structure, but they themselves are tied to the large organizations to a significant degree. The market which is developing could best be called "clustered" in structure where, as a late consequence of the creation of base institutes, the large organizations even today in a quasi-monopoly situation are surrounded by small organizations which are "working in," with independent, "free swimming" small organizations appearing as well.

The weaker organizations are forced to work on intellectual jobs which makes it impossible for them in advance to sell to others the second and additional copies of software products produced for customers. The accounting regulations make the large purchasers interested in selling copies of the products obtained in such deals, but in many places the expertise and recognition needed for this are lacking.

The marketing structure (in percentage of sales receipts) of machine data processing organizations developed as follows:

	1982	1983	1984
Large organizations	95	87	73
Enterprise economic work associations	1	2	3
Independent economic work associations	3	7	12
Small cooperatives	1	1	2
Small enterprises	1	1	7
Other	1	2	3
<hr/>			
Total receipts in billions of forints	5.6	6.1	7.5

The marketing structure of large computer technology organizations is:

Product or service	Number of large organizations selling
<hr/>	
Basic programs	48
Applications programs	192
Documentation	71
Computer hours	130
Consulting	20
Business organization	40
Research and development	46
Leasing, loans	16
Maintenance, repairs	21

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SCIENCE AND TECHNOLOGY

HUNGARY

## EMPHASIS ON ELECTRICAL ENGINEERING DECLINES

Budapest FIGYELO in Hungarian No 48, 28 Nov 85 p 4

[Article by "takacs": "Electrical Engineering--In The Shade?"]

[Text] At present the electrical engineering branch has about a 15 percent share of the production of the machine industry. This ratio will decrease by 1990. The volume of capitalist and socialist export and domestic sales are decreasing. By 1990, according to the basic version of the industrial block concept, one must count on a 2-5 billion forint decline compared to the 1984 gross production value of 34 billion. This was stressed at the most recent session of the Electrical Engineering Branch of the Chamber of Commerce. Zoltan Torok, acting department chief in the National Plan Office, also found this trend surprising, all the more so since electrical engineering is the fastest growing area in the developed machine industry countries--growing by 5-6 percent per year.

What are the reasons for the domestic decline? On the one hand there are market difficulties. Demand for some of our electrical engineering products (switches, monopoly and multiple fuses, various small and large voltage devices) has fallen off in a few socialist countries, in Czechoslovakia and the Soviet Union for example. They consider our prices high and there have been quality problems.

The export sales receipts of the electric motor and equipment industry, now more than 10 billion forints per year, distributed about half and half between ruble accounting and convertible accounting, hide normative and non-normative supports of 10 percent. After completion of the plan coordination talks pertaining to the next 5-year plan period our agreed-upon export will be 3.47 billion forints by 1990, which means that the socialist countries will be buying almost 35 percent fewer electrical engineering products from us than now.

Investment sources are not too ample, although somewhat more money will go to development than in the past period. But as a result of earlier developments the enterprises which are working well are very much in debt already. The ratio of fixed assets written off to zero in this branch is nearly 20 percent, and increases by a few percent each year. At present 48,000 work in this area, a 10 percent reduction in personnel compared to 1980.

The development of the background industry for the exporting enterprises is not satisfactory. And if the intermediate products are sold abroad out from under the end product manufacturer or if the contacts, screws, etc. are not of suitable quality then the capitalist import portion of the end products will be too high. As the acting department chief from the Plan Office said, the solution to this has been long awaited....

Is there a way to increase the investment sources? Well, for this the enterprises are recommended to adjust to the central development program for electrical engineering, to participate in the product structure transformation program of the World Bank and to bring in foreign working capital.

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SCIENCE AND TECHNOLOGY

HUNGARY

## NEW REGULATION OF TECHNICAL DEVELOPMENT

Budapest FIGYELO in Hungarian No 48, 28 Nov 85 p 7

[Article by Dr Ilona Horanyi (Mrs Hain): "Economic Regulation of Technical Development"]

[Text] It is an important task of economic guidance to encourage or force technical development, as a fundamental growth source for intensive economic development, in a proper direction. Naturally the general economic regulation and the specific economic regulation directed at this activity influence the effectiveness of technical development. A qualitatively new situation in the conditions for technical development evolved in the first half of the 1980's. A number of measures were born which served to encourage technical development and improve conditions for it. The changes in the regulators were based on the idea that technical development is an inseparable part of management. Basically the conditions for accelerating it can be produced in harmony with the further development of all regulation strengthening entrepreneurial behavior and orienting technical progress, keeping pace gradually with its effect in creating or strengthening markets. In addition to the determining role of the general economic environment and taking into consideration the peculiarities of technical development, there is also a direct special system of tools the further development of which can be effective only in harmony with the general conditions. The further development of this regulation is a process which began at the beginning of the 1980's and which necessarily laps over into the period of the Seventh 5-Year Plan.

### Separate Regulation is Decreasing

In order to reduce the separate character of the regulation of technical development the system for generating the technical development fund was changed as of 1 January 1983. With the exception of the ministerial enterprises in the machine industry and chemical industry which are research intensive, the decision pertaining to the size of the technical development fund to be generated passed to the enterprise sphere of authority. The new regulation creates more flexible conditions for technical development. It increases the independence and decision authority of the enterprises in generating and using the financial resources needed for technical development. It makes it possible to end the rigidly specific character of technical development resources and enterprise development resources by relaxing the

prescriptions of the financial regulators in some phases of the innovation process.

In the interest of strengthening enterprise independence the central restrictions connected with fund generation will be gradually eliminated until 1988. As a part of this process the sphere of those obliged to generate a technical development fund will narrow further next year as well. Obligatory fund generation will end for those chemical industry branches where the prescribed generation norm does not exceed 2 percent--the organic and inorganic chemical industry, artificial fertilizer and crop protection materials manufacture and the rubber industry. The norm for obligatory generation will decrease in the machine industry and mechanical equipment industry, in the transportation tools industry and in the electric motor and apparatus industry.

The income regulation introduced as of 1985 put an end, on a broad scale, to special funds created for differing purposes, according to differing rules, but generated without being taxed, dissolving them into the gross profit reserve. The generation of a technical development fund serves to delimit expenditures in time and designate provisional sources for later costs. The segregation of tax free income within the framework of the enterprise reserve for the technical development costs of coming years creates the same possibility as this.

#### Changes For 1986

As of 1 January 1986 the separate technical development fund will end and it will be dissolved into the profit reserve wherever the decision pertaining to technical development fund generation passed into the enterprise sphere of authority.

The new system for financing technical development is intended to broaden the authority of the enterprises in this regard; weighing their possibilities, they can carry out on their own authority that financial segregation which they consider most suitable. In the interest of not having short term interests influence technical development, which lays the foundations for the future, the profit reserve can be used without limit prior to the closing of annual accounts only and exclusively to finance technical development tasks, something which deviates from the general prescriptions for use of the profit reserve.

Since the separate fund ends--with the exception of enterprises designated for obligatory generation of a technical development fund--the managing organizations can generate a profit reserve to set aside financial cover for technical development expenditures coming up in the periods to come.

On the basis of practical experience and enterprise indications it has become necessary to simplify the method of calculating the direct, material free sales income, the basis for the central technical development contribution and the obligatory enterprise technical development fund generation still realized in a narrow sphere. For this reason, as of 1 January 1986, it will not be necessary to break down the sales income separately into domestic and foreign

sales income when calculating the projection base. Thus the costs paid in foreign exchange and the rebate on the differential producers turnover tax will be ignored.

#### Where Next?

Not counting minor corrections, the system for generation and use of the central technical development fund will be elaborated in 1986 into a further developed system of generation and use of the central technical development contribution, going into effect as of 1987, in harmony with the modernization of economic guidance, after making a study of the possibility for a further development of the banking system and increasing the role of banking type allocations.

At present the magnitudes of the central technical development contribution are differentiated. But the sectoral differentiation of managing organizations performing identical activity is not justified. Considering this and considering the changes introduced as of 1985 in the enterprise guidance system, the sectoral differentiation, and the earlier differentiation depending on supervisory affiliation, of the central technical development contribution will end as of 1986. Enterprises and cooperatives belonging to the same branch will pay a contribution of the same magnitude. Thus the generation norms have developed by branch, independent of research needs.

The goal of the measures to be introduced as of 1 January 1986 is to dissolve the relative separation of the regulation of technical development in harmony with the further development of general regulation and to broaden the independence and decision rights of the enterprises.

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SCIENCE AND TECHNOLOGY

HUNGARY

ACADEMY SECRETARY ON TOPICAL S & T ISSUES

Budapest NEPSZABADSAG in Hungarian 30 Nov 85 p 13

[Speech by Lenard Pal to the Political Academy of the MSZMP: "Topical Questions of Scientific and Technical Progress"]

[Text] We live in an age in which it is hardly necessary to prove the outstanding importance of scientific and technical progress in the development of society and the economy. At the most recent 13th congress of our party it was formulated with complete unanimity that an acceleration of the pace of scientific and technical progress is a condition for intensive economic development and that this acceleration can and must be aided with--among other things--the development of appropriate incentives, improving the cooperation of producing and research and development organizations and concentrating intellectual forces and material assets on the most important tasks. The party regards science as a natural ally of socialism, it respects the freedom of creation, it honors researchers doing effective work and it expects from the cultivators of science that they will contribute to raising the level and efficiency of productive work with usable research achievements and with the development and application of new and economical technological procedures.

Our party has always turned special attention to science policy and expresses this consistently in its resolutions. The science policy guiding principles approved by the Central Committee in 1969, in the development of which the best experts of research and technical development participated, have proven correct over the long term. The statement that there are not--and cannot be--any truly scientific problems research on which would not be useful to socialism from the ideological viewpoint had a favorable political effect. There are no reactionary facts in nature and scientific research work cannot be forced to prescribed conclusions. A correctly interpreted freedom of research is an indispensable condition for the cultivation of science.

The Political Committee has frequently reviewed and checked the experiences in implementing the science policy guiding principles and dealt with this theme most recently in January of this year. In its position statement, which the 13th congress confirmed, it was clearly formulated that the need for scientific research and technical development would increase further in the years ahead. This need appears in a number of important areas--in working out forecasts and decision alternatives indispensable for a deliberate forming of

society, in laying the foundations for economic development, in spreading new technologies, in creating conditions for cultured and healthy living conditions and in forming social awareness.

Now, when I undertake to outline the topical questions of scientific and technical progress 9 months after the congress, I must primarily give an account of what is to be done. But to do this I must characterize the medium and the processes taking place in it which fundamentally determine the conditions for the necessary and possible action.

#### An Average Level of Development--A Differentiated Technical Level

In the technical level of the domestic economy also is manifested the fact that economically Hungary belongs in the ranks of the countries with a medium level of development. The dynamic economic growth of more than three decades has resulted in there being a great differentiation of technical level behind the average of medium development. In the industrial plants along side processes, machines and equipment which count as most modern--and which often are not utilized--there are old, obsolete technologies, outmoded machines and methods of production guidance whose time has past. There is a general contradiction that the investments have resulted in modern basic equipment, but the modernization of the service, auxiliary processes for this has not taken place and this greatly limits the competitiveness of production and the efficient operation of the basic equipment, which is modern in itself, for the weakest part always limits the capacity of the entire system.

In the basic production branches of agriculture they are producing with tools, chemicals and production organization procedures making possible yields at the world level, but it is a source of increasing trouble that the cost level of production is high in the present world market situation. This also calls attention to the fact that the level of technical development cannot be interpreted by itself, abstracted from the efficiency of production.

In the period of the Sixth 5-Year Plan thus far our economy has waged a tense struggle to improve the external economic balance. Naturally even in the course of preparing and adopting an economic policy line giving first place to ensuring and improving the economic balance it was clear that without an acceleration of technical development we would not be able to put the process of improving the balance on a lasting foundation. So far, however, the acceleration of technical development has not taken place.

It is already generally recognized that the basic causes for the unsatisfactory progress of technical development are to be sought in our social and economic relationships as a whole. So one can expect an acceleration of technical development also primarily from a change in the economic environment which encourages and forces technical development better than heretofore and which aids better than heretofore the development of a social order of values and public spirit which show appreciation for knowledge, performance, the assumption of risk and efficiency.

## National Medium-Range Research and Development Plan

Every tool of economic guidance must undertake a role in such a development of the economic environment. We must deal more with the question of how planning can play a more active role in improving the conditions for technical development within the economic guidance system.

Various answers can be given to these questions. Professional public opinion is not uniform on whether it is just to make such a demand of planning or whether technical development and innovation can be grasped at all with the tools of economic planning. International examples show that even in an economic environment (encouraging and forcing) favorable to technical development there is a need for a high degree of awareness on the part of economic guidance, for a deliberate application of the system of tools to aid technical development. For this reason, when developing economic planning, there must be an effort to see that economic planning helps technical development effectively by laying better foundations for the goals of development policy and by discovering the critical points of developmental processes.

In the further development of the economic guidance system in the first half of the 1980's measures were taken which served to encourage technical development and improve conditions for it. In addition to the general rules aimed at encouraging and forcing more efficient management there were such measures as transforming the organizational frameworks for research and development, creating innovation financial institutions, use of the competition system in state financing of research and development, introducing an accounting system encouraging the division of labor which is indispensable in research and development, offering tax incentives, etc. All these steps created a more favorable economic environment and system of conditions for technical development, but the expected effects have evolved only through contradictions and more slowly than required.

The National Medium-Range Research and Development Plan (OKKFT) appeared as a new element in the planning system. This plan summarized the goals and efforts judged to be most important in the area of scientific research and technical development and made an attempt to build up a complex innovation chain in some areas. The programs of the OKKFT started during the Sixth 5-Year Plan helped raise the technical level of industry, improve domestic supply and fulfill CEMA obligations. The truth is that in only a few cases was state guidance able to put the programs of the OKKFT into use to permanently improve capitalist market exports.

Under the given conditions the balance policy--otherwise necessary--proved to be a constraining factor, because it was necessary to make concessions in the efficiency requirements for production and export. Import competition could not develop and the import of modern technology lagged behind.

There were few possibilities for developments serving more distant goals and technological modernization; thus even the developments serving export became vulnerable in the medium term, since no S&T background aiding further renewal was created.

Under the conditions of restrained economic growth the importance of getting by, survival, strengthened in the system of social values and in economic guidance--at the level of both enterprise management and individual existence--as opposed to the importance of technical development activity bringing results in the longer term and creating a foundation for the future.

I believe that it is superfluous to emphasize that the work of the enterprises is reflected fundamentally in the problems and achievements of the technical development of the economy. The enterprises are the true depositories of the realization of technical development. The enterprises have about half of the developmental capacity and the economic utilization of new scientific and technical achievements depends on their work, naturally taking into consideration the medium in which they work.

One can find lively and successful technical development at those managing bodies which find themselves faced with demanding customers and must struggle in a strong competition for marketing opportunities. But at those enterprises which can sell their products--of unaltered quality and unaltered technical level--systematic modernization does not get the place it deserves.

The enterprises feel the investment possibilities, which have narrowed significantly in recent years, as an obstacle to technical development. One really cannot create the conditions for modernization of production without investments. For this very reason the existing and not always insignificant investment possibilities should be turned to technological renewal and not to extensive expansion. Many surveys show that even today an excessively large proportion of the investments serve a quantitative growth of production.

Much time and valuable technical development work are wasted because market needs were not taken into consideration in selecting the development themes and care was not taken to constantly review, as a function of changing market needs, whether the research and development under way should be strengthened or slowed. Often a way or an organizational form which would make possible the realization of a really good research and development achievement is not found. It also happens that there is no possibility of realization, because the market is monopolized or could be built up only with expensive advertising and much time. Whatever the reason, if the innovation process does not reach its final phase and does not culminate in an economic result then the economy suffers a loss.

One can expect an increase in the technical development activity of the enterprises after the realization of the changes that have been decided upon in the program for the further development of the economic guidance system. The most essential of these are strengthening market competition and a consistent realization of the efficiency requirements.

#### Enterprise, State and Central Development Tasks

We must put an end to the superfluous patronage of central organs, but at the same time it must be seen that the state and its central organs must play an important role in initiating, promoting and supporting the chief processes of technical development and technological modernization affecting the economy as

a whole. This is especially so in a period when the efficiency requirements function to only a moderate degree, but even after a greater realization of the efficiency requirements central influence must be maintained. The interests of enterprises and enterprise collectives are, by their nature, short term ones.

It is well known that a significant part of the technical development processes will have an effect only in the longer term, with the passing of 5, 10 or even more years. The enterprise collectives will hardly be inclined to favor some result which may be achieved in 8-10 years--with a certain probability--over possibilities to increase their earnings today or tomorrow. The essence of the question is that ownership interest is relatively weak in our economy. Under such circumstances it is the task of central guidance to represent the predictable interests of the more distant future. It is not a matter of indifference what magnitude the central intervention has or how it is realized. If this intervention means many, irrational limitations for the enterprises then there might be more disadvantages than advantages. The interventions should not hold back the development of flexible adaptability nor decrease the feeling of responsibility of the enterprises.

The central organs not only have the task of working out a strategy for technical development--in harmony with our general economic policy goals--and defining the chief priorities but also of ensuring suitable frameworks for technical development serving to increase efficiency, primarily in regard to its unique infrastructure.

At every level of guidance there must be a transcending of the simplifying and problem-free treatment of technical development. At the level of setting economic policy directions and at the level of detailed solutions technical development must be viewed and handled together with those contradictions and tensions and with the unavoidable structural and interest rearrangements which this development produces in practice over the shorter or longer term. These tensions must be dealt with, for if we do not then we will have to face even more serious all-social consequences deriving from slower technical development and the backwardness of the technical level.

A favorable turn must be achieved in the social evaluation of the role and significance of technical development in the period of the Seventh 5-Year Plan. The crucial step in achieving this turn is to create economic conditions which will make the working collectives and the leaders interested in strengthening the long-term competitiveness of undertakings.

In order to judge the situation and define the tasks for the future we must see that the growth in research and development expenditures slowed in the past 5 years and that the ratio of budgetary sources within the expenditures has constantly decreased. The ratio of support for basic research has declined and the share of expenditures for medical and agricultural research has decreased. The decrease in research investments is an especially dangerous trend; this was of greater magnitude than the decrease in the ratio of investments in the economy as a whole. For this reason the condition and modernity of the research tools base have deteriorated in the relative and absolute sense and a critical situation has developed in some places.



## Research Expenditures Increase by 30 Percent in 5 Years

I speak about these circumstances so that I can say that, in accordance with the resolution of the 13th congress, the proposals pertaining to the prescriptions of the Seventh 5-Year Plan have developed favorably. According to the ideas which have been agreed upon the budgetary supports for research will increase by almost 30 percent in 5 years compared to those of the Sixth 5-Year Plan, and, what is especially important, investment will more than double. A special fund, the National Research Fund, will be established to support basic research and competition based on proposals will play a determining role in making use of it.

One condition for the realization of the strategic goals of economic policy is to link into the chief currents of scientific-technical progress taking place in the world. Thus the emphasized points of domestic technical development must be selected accordingly. On the basis of international experience and the situation of our economy it can be established that a renewal of the economy will require a broad modernization of technologies (by technology here we mean product and manufacturing technology and the combined application of them). The modernization of technologies--taking into consideration the developmental trends which can be observed in the world--has taken place basically in three directions which indicate for us also the chief directions of technical development. We should regard these chief directions as having an orienting effect for both research and development and economic organizing work. These are the following:

- the development of technologies aiding the economical use of material and energy (conservation),
- the broad spread of electronics and the development of microelectronic technologies, and
- the development and use of biotechnologies.

These chief trends are in harmony with the complex scientific-technical development program decided upon at the high level meeting of CEMA held in 1984, and significant measures were taken this year to accelerate the working out of this program.

When determining the stressed tasks for scientific research and technical development there is need for an organizing principle in addition to the priorities listed. This principle must be drawn from the need to improve the background conditions aiding the development of the economy and technical development and scientific progress therein. An analysis of the structural problems of the economy has led to the conclusion that the most serious structural contradictions can be attributed to the lack of those quality factors which in the final analysis determine the level of production and work culture. In many cases these deficiencies cause the lower efficiency of production and hold back the evolution of technical development.

Thus it is necessary to stress a broadly interpreted development of the infrastructure as a priority of equal value with the chief trends of technological development.

It can be regarded as self-evident that the most important area for the practical application of scientific achievements is technical development, and that the natural and technical sciences provide a good part of these achievements. At the same time it is important for us to see that there is a constant expansion and specialization of a system of information which, in regard to its content, has a social science character and without which technical development cannot be effective. This information pertains primarily to human factors and needs, the cooperation of working people, the peculiarities of work organizations, the way in which information is handled, decisions prepared and made, etc.

#### Knowledge and Information as the "Fourth Factor"

Using social science information resembles--in a certain sense--the use of natural science information. The practical processing and application of this information means the development of human "technologies" which facilitate the efficient work of people working in the economy and aid adjustment to the conditions of work or the humanization of working conditions.

The efficiency and speed of technical development depend not only on the immediate information base, not only on the scientific achievements of domestic or foreign origin or the information mastered but also on that medium which uses and accepts this information. The role and significance of this medium is virtually determining in the use of all knowledge.

It is primarily the level of the receiving medium which determines the character, direction, pace and even possibility of technical development, just as a developing organism determines which environmental relationships are suitable for encouraging its development and which are not. A determining role in the formation of this medium is played by the social sciences and the institutions transmitting their results, primarily education, further training, popular culture and the complex and rich tools of mass communication. The social medium providing the much mentioned system of basic conditions for economic-technical development is nothing more than the community of "cultured human heads", a cultured society prepared not only with modern information but also with a readiness for self-cultivation, ready for further training and renewal, oriented toward the production of value.

We must see that knowledge and information--the acquiring and mastering of it as well as the use of it--can become the "fourth factor" in production, can be a driving force for social and technical development only if we create the conditions necessary for its reception, if we continue to strengthen the social rank and recognition of knowledge and information in both moral and material respects.

The spread of new ideas and methods always takes place through conflicts, in a battle of views. The party organizations have the important task of standing up for creative people arguing for the future of the given organization, for

the use of new methods, scientific achievements and new technologies, and actively participating in the work. Whether or not we will be capable of exploiting the possibilities deriving from the efficient operation of the human factor in accelerating technical progress depends also on the development of the style and methods of party work.

The resolutions of the 13th congress have designated the path which we must consistently follow in order to be able to prove that we do have the ability and the will for this, but we must fight for the results.

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SCIENCE AND TECHNOLOGY

HUNGARY

# MEDIUM-TERM RESEARCH AND DEVELOPMENT PLAN

Budapest MAGYAR HIRLAP in Hungarian 20 Dec 85 p 7

[Article by Istvan Palugyai: "Medium-Term Plan for Research and Development"]

[Text] In connection with the meeting of the Council of Ministers a press conference was held Thursday in the Parliament at which Andras Korcsog, secretary of the Science Policy Committee, reviewed the National Medium-Term Research and Development Plan for the Seventh 5-Year Plan and the further development of the guidance system for scientific research and technical development.

In the next 5 years greater significance than heretofore will be attached to a swifter take-over of the newest results of scientific research and technical development, to raising the level of research and development work and to making use of the results achieved without delay. These goals have been raised among the most important tasks of the period before us and they may help the unfolding of the intensive aspects of the economy and a stepping up of social development and the competitiveness of the economy. Naturally hereafter also our intellectual reserves must be used in a concentrated way and as in the case of the complex science and technology program of CEMA for the year 2000 so the chief directions of research and development have been developed nationally. To a large extent these are the same as the priorities of past years but in the future a more worthy place than heretofore will be given to basic natural science research with the aim of strengthening the entrepreneurial character of technical development.

In connection with the institutional system there is an essential aspiration to improve the personnel and material conditions for university research which is in a more adverse situation. Within the framework of this there will be a development of cooperation between the universities and the research institutes or enterprise research sites. Improving the supply of instruments for scientific research and technical development is an urgent task. Within the framework of this the reconstruction of the instrument park must be begun or continued with central measures. The mechanism for obtaining the machines, parts and experimental materials needed for research will be simplified and the much criticized supply of professional literature for research sites will be improved.

In the next plan period about 3 percent of the part of the national income used domestically, which is expected to be 152-164 billion forints, can be spent on research and development. Of this 68-74 billion forints will come from central sources; the enterprises will cover the rest. Fifty percent more than before can be turned to research and development investment, about 35-36 percent more in regard to convertible exchange. A total of 18-19 billion forints can be turned to programs within the new OKKFT [National Medium-Term Research and Development Plan], and 3.8-4 billion will go to the National Scientific Research Fund now being established to encourage basic research.

The government has adopted five fewer programs oriented toward economic goals than in the past period--nine this time--and has adopted one natural science program. Of these the spread of electronics and manufacturing automation, the various areas of which are embraced by three programs, received the greatest material support, more than 20 billion forints. Material use and energy management touch on two programs while research and development and application of biotechnological processes which can be used in agriculture and industry affect one. But biotechnology has a role in the program for the development of pharmaceuticals, crop protection materials and intermediary manufacture and development of hemotherapy and diagnostic preparations and in the program aimed at developing foodstuffs production. The program aimed at increasing soil productivity and biomass production has a biological character and the only basic research program of the OKKFT also has a biological purpose. The Hungarian Academy of Sciences has theme responsibility for the latter program while the appropriate ministries and the OMFB [National Technical Development Committee] share responsibility for the others. The chairman of the OMFB will continue to be responsible for high level coordination of the OKKFT. In the wake of a position statement expected next year the plan will probably be expanded by four social science programs and a government level program dealing with environmental protection is being prepared also.

With the increase in the role of scientific research and technical development the conditions for this work are changing and the requirements are rising. Parallel with this the party has recommended certain changes in state guidance of research and development, in the spirit of the Political Committee resolution of January this year. The changes, to be carried out in two stages, will affect the activity of the TPB [Science Policy Committee], the Academy and the OMFB and research done at the ministry level. The number of members of the Science Policy Committee will be reduced to 10, while strengthening the leadership of the committee in its principle activity. The Hungarian Academy of Sciences will take over national direction of the social sciences and basic research. At the same time two TPB subcommittees, the National Committee for Large Research Instruments and the Committee to Coordinate International Research and Development Contacts, will go to the OMFB. Within a year and a half the Ministry of Culture will take back the National Scholarship Council.

Answering a question by MAGYAR HIRLAP Andras Korcsog, speaking of the creation of the National Scientific Research Fund (OTKA), said that this became necessary because in recent years the ratio of money turned to basic research had decreased dramatically within the research and development expenditures. For this reason, even at the beginning of 1984, the government released 200

million forints in emergency aid to support basic research. The MTA [Hungarian Academy of Sciences] proposed a national competition, which let loose gigantic tensions. Claims for about 4 billion forints were submitted in competing for the 200 million. Further analysis of this led the science policy leadership to decide that beginning in the Seventh 5-Year Plan they would create the OTKA, largely from budget money but to a smaller extent from research and development funds, and 20 percent of this fund will be available in convertible exchange for experts working in any research site in the country. Use of the fund will be by means of open competitions.

Competition proposals submitted will be subjected to a multi-step professional control system with which they will try to maintain the objectivity of judgment. The bodies of the Academy and domestic and even foreign experts will participate in this work. An inter-ministry OTKA committee will provide the foundation for final decisions; the chairman of this committee will be the first secretary for the MTA. A decision can be expected by the middle of July in regard to proposals received by 28 February and the researchers will be able to get at the money won from the middle of September.

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SCIENCE AND TECHNOLOGY

POLAND

# JET-PUMP MARINE PROPULSION SYSTEM DESIGNS INTRODUCED

Gdansk BUDOWNICTWO OKRETOWE in Polish No 9, Sep 85 pp 372-377

[Article by Janusz Piszczek: "Generator-Jet Pump Propulsion System"]

[Excerpts] The main advantages of the proposed "generator-jet pump" propulsion system over the conventional "internal-combustion engine--propeller" system are:

- elimination of the internal-combustion engine
- elimination of the propeller shaft and screw
- elimination of the mechanical steering
- lower noise and vibration levels
- higher reliability
- better performance in shallow waters
- possibility of distributing the propulsion power among several independent propulsion systems
- possibility of overhauling each system without shutting down all others

I believe that these advantages of the proposed propulsion system should get engineers as well as researchers interested in its possible practical applications. The basic element in this concept generates an exhaust jet. The heat generator in this system is a set of devices forming the propellant gas mixture which drives the jet pump. The parameters of that propellant mixture are adjusted for maximum efficiency of heat-to-work conversion. The mixture is formed by the method of high-pressure fuel combustion with subsequent air- and water-cooling of the combustion products. The three proposed versions of such a "generator-jet-pump" system differ mainly in the method of air compression. It is the compression process which determines the overall thermal efficiency of the propulsion system and the structural features of engines included in it.

## GS-I Propulsion System

The concept of the GS-I system is shown schematically in Figure 1. The propellant mixture, which delivers work to the jet pump, is a mixture of flue gases with air and steam. In the combustion chamber CCh the fuel is burned under pressure and in the mixing chamber MCh, a compartment of the pressure-combustion chamber, the flue gases are air- and water-cooled down to operating temperature. A compressor Cp driven by a uniflow engine UE delivers the air for

burning the fuel and the air for cooling the flue gases, with the uniflow engine running on a part of the propellant mixture. The remaining part of the propellant mixture is injected into the jet pump JP, where it expands and forms a wet exhaust jet. Water taken in from outboard is passed through an air cooler AC, the compressor and the uniflow engine, and a cooler CU for the propellant leaving the uniflow engine, whereupon it is injected by a water pump WP into the mixing chamber.

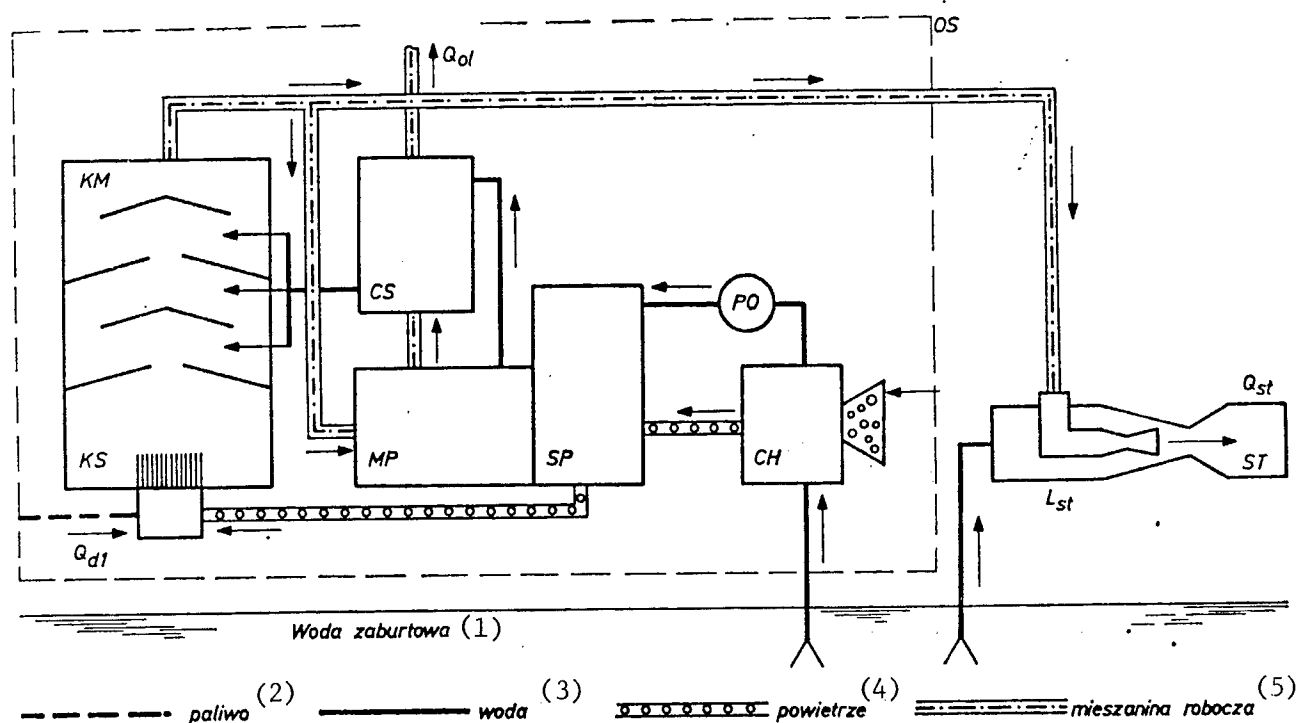


Figure 1. Propulsion System (GS-I)

Key:

KM= MCh  
KS= CCh  
CS= CP  
MP= UE  
SP= Cp  
PO= WP  
CH= AC  
ST= JP  
OS= ASh adiabatic shield

1. Outboard water  
2. Fuel  
3. Water  
4. Air  
5. Propellant mixture

$Q_{o1}$  - heat lost with propellant exhausted from uniflow engine  
 $Q_{d1}$  - heat supplied with fuel to combustion chamber  
 $Q_{st}$  - heat lost with propellant mixture in jet pump  
 $Q_{st}$  - work obtained from expanding propellant mixture in jet pump



## GS-II Propulsion System

The concept of the GS-II system is shown schematically in Figure 2. This system eliminates the drawback of the GS-I system, namely the compression of air by means of a low-quality propellant mixture. Here air is compressed by means of superheated steam which has been generated from water in a high-pressure boiler BP. The water is first taken in from outboard and passed through the air cooler AC, where it absorbs all the heat dissipated by the generator set inside the adiabatic shield ASH, then it cools the suction nozzle SN (or a compressor and the uniflow engine driving it), whereupon it is fed into the boiler. The steam, after having delivered work for air compression and being partially decompressed from  $p_b$  (steam pressure in boiler) to  $p_p$  (pressure of propellant mixture), is further decompressed from  $p_p$  to  $p_a$  (ambient pressure) in the jet pump together with the flue gases. Use of a suction nozzle for compression of air eliminates the kinematics of a compressor with uniflow engine. Use of a compressor with uniflow engine, on the other hand, allows for separate admission of air into the combustion chamber and of propellant steam into the mixing chamber. The propellant mixture can work in a jet as well as in other fluid machines.

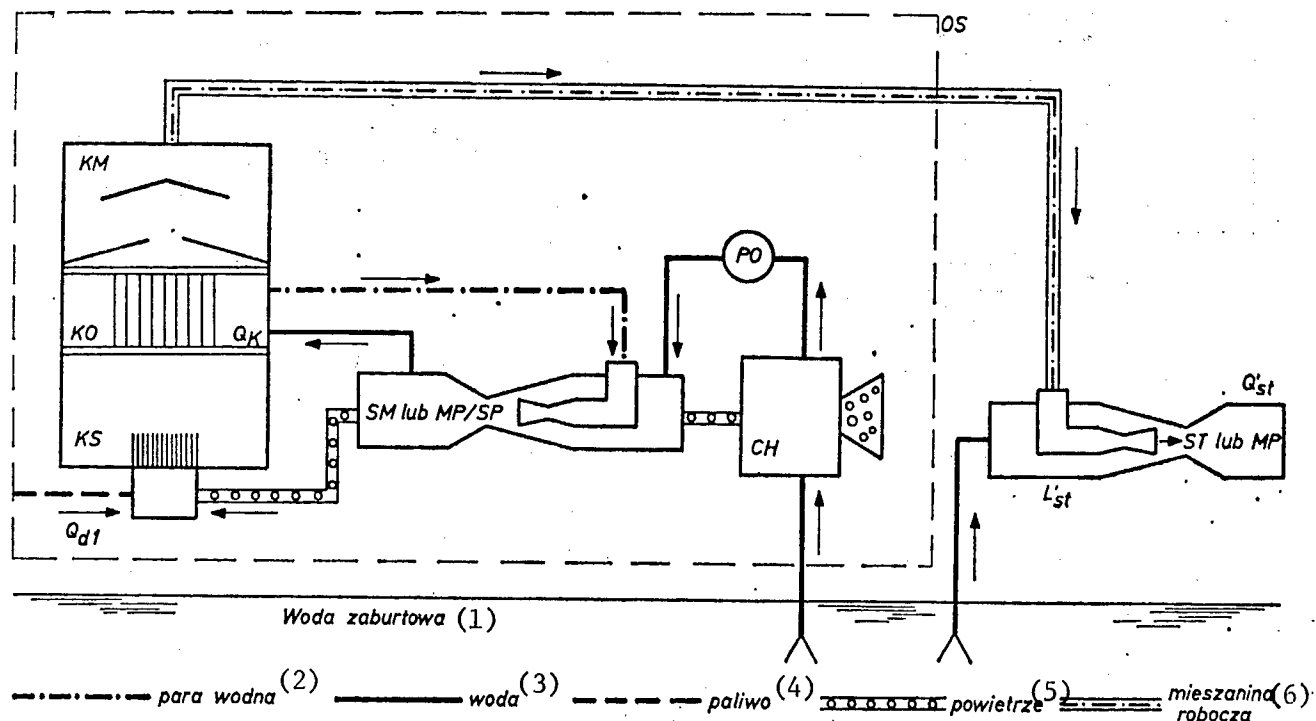


Figure 2. Propulsion System (GS-II)

Key:

$$\overline{KM} = MCh$$

KO= BP

$$KS = CCh$$

PO= WP

$$\text{CH}=\text{AC}$$

ST lub MP= JP or UE

OS= ASh adiabatic shield

SM lub MP/SP= SN or UE/Cp

 $Q_K$  - heat supplied to boiler

$Q_{dl}$  - heat supplied with fuel to combustion chamber

$Q'_{st}$  - heat lost in jet pump

$L'_{st}$  - work obtained in jet pump

1. Outboard water

## 2. Steam

### 3. Water

4. Fuel

5. Air

6. Propellant mixture

# GS-III Propulsion System

The concept of the GS-III system is shown schematically in Figure 3. Here the compressor, which feeds compressed air into the combustion chamber, is driven by an internal-combustion engine SS. The latter uses up a part of the cooled but uncompressed air. The water pump WP sucks in cooling water from outboard, then drives it through the engine SS and the flue-gases cooler CF. Driving the compressor with an internal-combustion engine supplies the generator of propellant mixture with additional heat  $Q_{s2}$  contained in the engine fuel.

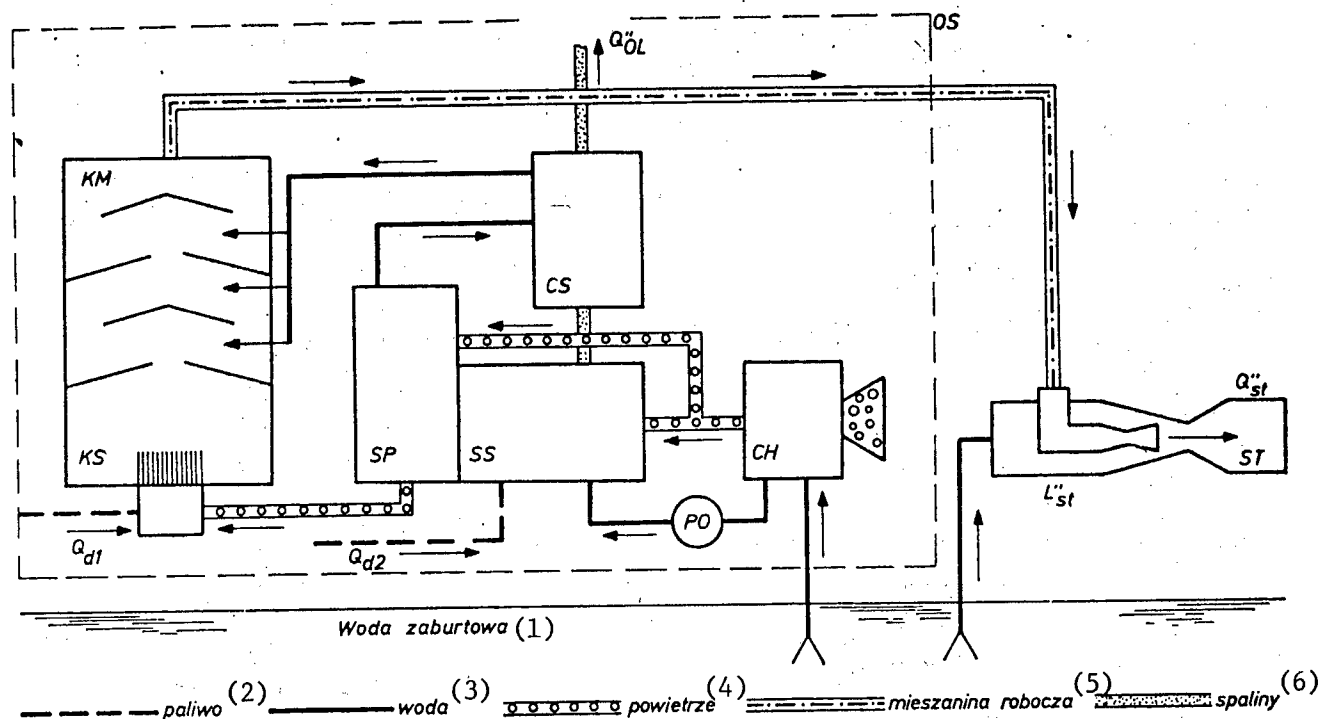


Figure 3. Propulsion System (GS-III)

## Key:

KM= MCh

KS= CCh

CS= CP

SP= Cp

SS= IC

PO= WP

CH= AC

ST= JP

OS= ASh adiabatic shield

$Q''_{OL}$  - heat lost with cooled flue gases

$Q_{d1}$  - heat supplied with fuel to combustion chamber

$Q_{d2}$  - heat supplied with fuel to internal-combustion engine

$Q''_{st}$  - heat lost in jet pump

$L''_{st}$  - work obtained in jet pump

1. Outboard water

2. Fuel

3. Water

4. Air

5. Propellant mixture

6. Flue gases

## Conclusion

Realization of a propulsion system for marine vessels according to any of the "generator-jet pump" schemes which I have proposed opens up new prospects for production methods as well as for broad engineering and manufacturing research. While describing all the possibilities in detail is rather difficult, it is enough to say that current requirements for less vibration and noise along with more reliable propulsion can be attained here to a satisfactory degree. Each version of the proposed propulsion system is suitable for a different range of applications. The GS-I system, despite its low efficiency, can be used for "temporary" duty such as seasonal operation or short intermittent operations during summer vacations on small boats. Fuel consumption is in these cases not as crucial a problem as durability, reliability, simplicity, and quiet running.

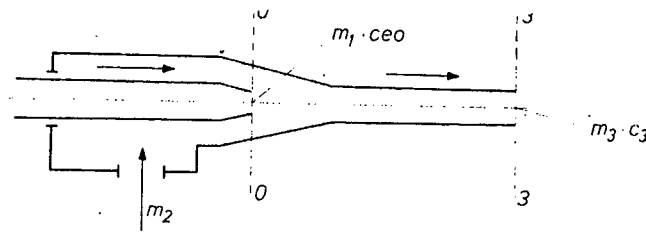


Figure 4. Conceptual Schematic Diagram of Jet Pump

### Key:

- $m_1$  - mass of propellant mixture
- $c_{e0}$  - velocity of mass  $m_1$  discharging from jet pump nozzle in section 0-0
- $m_2$  - mass of outboard water sucked in through jet pump
- $m_3 = m_1 + m_2$
- $c_3$  - velocity of mass  $m_3$  discharging from jet pump in section 3-3

The GS-II system is most attractive with a suction nozzle for air compression, because it then contains almost no moving parts at all. However, low efficiency of a suction nozzle presents a problem here. I envision use of this system on large and small boats as either permanently built-in or attachable drive.

The GS-III system is most attractive of them all on account of its highest propulsion efficiency. Since the internal-combustion engine plays a major role here, this system can be used on large vessels as main emergency drive with current generating engines. As an independent drive, moreover, this propulsion system can be used on such vessels as river and ocean barges.

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